

ESREL 2026

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domingo, 14 junho 2026

Registration [Minho University - Campus Gualtar - Building 2](#)

17:30

19:00 **Welcome reception** [Minho University - Campus Gualtar - Building 2](#) Welcome Reception

Date: Sunday, 14th June

Time: 17:30 – 19:00

Location: Universidade do Minho – Campus de Gualtar, Building 2

The activity will be complemented by live music with DJ Ramtag, canapés and soft drinks.



segunda-feira, 15 junho 2026

08:30

18:30 **Registration** [Forum Braga Foyer - Level 0](#)

09:00

09:45 **Opening Ceremony** [Grand Auditorium - Level 0](#)

09:45

10:30 **Keynote lecture 1 (man-made hazards):** [Grand Auditorium - Level 0](#)

Chairs

José António Silva De Carvalho Campos E Matos

Michael Beer

Keynote lecture

Are we prepared to decide in a limitless world? - Mario P Brito

10:30

11:00 **Coffee break** [Forum Braga Foyer - Level 0](#)

11:00

12:30 **Parallel Sessions**

Session: AA6 – Energy [Grand Auditorium - Level 0](#)

Chairs

Jonas Johansson

Speaker

Slotsvik, Tone Njølstad OC - (26277) - SAFETY AND SECURITY ARGUMENTS IN RESISTANCE TO AMMONIA PRODUCTION PLANTS: A CASE STUDY FROM SAUDA, NORWAY.

Slotsvik, Tone Njølstad (Norway)¹; Stavland, Brynhild (Norway)²; Kjestveit, Kari (Norway)¹

1 - Working Life, NORCE, Norway; 2 - Institute for safety, economics and planning, University of Stavanger, Norway

Zhao, Huanyu OC - (24059) - INTELLIGENT RECOGNITION AND CLASSIFICATION OF PIPELINE HCAS IN FEW-SHOT SCENARIOS: A PHASED TRANSFER LEARNING FRAMEWORK

Zhao, Huanyu (China)^{1,3}; Li, Haochong (China)^{1,3}; Pan, Shiyuan (China)^{1,3}; Qiu, Rui (China)^{2,3}; Niu, Pengtao (China)^{2,3}; Fu, Guangtao (China)^{2,3}; Liang, Yongtu (China)^{2,3}

1 - The College of Artificial Intelligence, China University of Petroleum (Beijing); 2 - The College of Mechanical and Transportation Engineering, China University of Petroleum (Beijing); 3 - Beijing Key Laboratory of Urban Oil and Gas Distribution Technology, CO 102249 China

Macedo Filho, Helio Fernandes De Carvalho OC - (26132) - COMPARATIVE CASE STUDY OF EAST, HTA, OESD AND SHERPA METHODS IN MAINTENANCE ACTIVITIES ON HIGH VOLTAGE ELECTRICAL POWER NETWORKS (GREATER OR EQUAL THAN 13.8KVA) IN WORK WITH ENERGIZED NETWORKS.

Macedo Filho, Helio Fernandes De Carvalho (Brazil)¹; Cardoso Junior, Moacyr Machado (Brazil)¹;

Biaseto, Mirela Ponce (Brazil)¹; Evano, Estelle (France)¹; Cesare, Mateus (Brazil)¹

1 - ITA - Instituto Tecnológico de Aeronáutica

Stavland, Brynhild OC - (26143) - DRIVERS AND BARRIERS IN HYDROGEN INVESTMENT DECISIONS: THE ROLE OF POLICY COMMUNICATION

Stavland, Brynhild (Norway)¹; Selvik, Jon Tømmerås (Norway)¹

1 - University of Stavanger

Svensson, Signe OC - (26156) - CURRENT THINKING ABOUT THE FUTURE GRID: OPERATOR AND EXPERT PERSPECTIVES ON CONTROL ROOM WORK IN THE EVOLVING ELECTRIC POWER SYSTEM

Svensson, Signe (Sweden)¹

1 - Chalmers University of Technology

Bruno, Emanuela OC - (26188) - SCALED CFD MODELLING AND EXPERIMENTAL INVESTIGATION OF ACCIDENTAL HYDROGEN RELEASES IN CONGESTED ENVIRONMENTS

Bruno, Emanuela (Italy)¹; Gerboni, Raffaella (Italy)¹; Carpignano, Andrea (Italy)¹

1 - Politecnico di Torino

Arellano Ortega, Lincoln Josue OC - (26311) - BALANCING PERFORMANCE AND RELIABILITY IN AMMONIA-FUELLED SOFCS

Arellano Ortega, Lincoln Josue (Netherlands)¹; Meghoe, Annemieke Angelique (Netherlands)¹; Loendersloot, Richard (Netherlands)¹; Tinga, Tiedo (Netherlands)^{1,2}

1 - University of Twente; 2 - Netherlands Defence Academy

Duque, Jardel OC - (28956) - MODELLING MARKET ADAPTATION AND REGULATORY FLEXIBILITY FOR FUEL SUPPLY RESILIENCE

Duque, Jardel (United Kingdom)^{1,2}; Moura, Raphael (Brazil)²; Patelli, Edoardo (United Kingdom)¹
1 - University of Strathclyde; 2 - National Agency for Petroleum, Natural Gas and Biofuels (ANP)

Session: MA11 – Risk assessment **Small Auditorium - Level 1**

Chairs

Dusko Kancev

Speaker

Majri, Sarra OC - (26246) - A FRAMEWORK FOR DESIGNING SECURITY ZONES IN OFFSHORE WIND FARMS

Majri, Sarra (Germany)¹; Stockbrügger, Jan (Germany)¹; Sill Torres, Frank (Germany)¹
1 - German Aerospace Center

Berres, Axel OC - (26266) - RETHINKING SAFETY ASSESSMENT IN THE AGE OF AI: CHALLENGES OF A MOVING BASELINE

Berres, Axel (Germany)¹
1 - German Aerospace Center

Dos Santos Nicolau, Andressa (Guapimirim, RJ) OC - (26555) - INSPECTION OPTIMIZATION FOR SUBSEA SYSTEMS: A RISK AND COST ANALYSIS OF A PRODUCTION MANIFOLD

Dos Santos Nicolau, Andressa (Brazil)¹; Correia Martins, Maximiliano (Brazil)¹; De Jesus Campos De Azevedo Julio, Carolina Victória (Brazil)¹; Miralles Schleder, Adriana (Brazil)²; Ramos Martins, Marcelo (Brazil)²; Oliveira De Barros, Leonardo (Brazil)³; Capelari Orlowski, Renê Thiago (Brazil)³
1 - Graduate Program of Nuclear Engineering, COPPE, Federal University of Rio de Janeiro, Rio de Janeiro, RJ; 2 - Analysis, Evaluation and Risk Management Laboratory – LabRisco, Naval Architecture and Ocean Engineering Department, University of Sao Paulo, Sao Paulo, Brazil; 3 - Research and Development Center of Petrobras – CENPES, Rio de Janeiro, Brazil

Bhandari, Dikshya OC - (26066) - A SYSTEMS THINKING PERSPECTIVE ON EVENT TREE ANALYSIS FOR HYDROGEN SAFETY

Bhandari, Dikshya (Norway)¹; Selvik, Jon Tømmerås (Norway)¹; Abrahamsen, Eirik Bjorheim (Norway)¹
1 - University of Stavanger

Apreda, Carmela OC - (27862) - ENABLING RESILIENT PUBLIC REAL ESTATE ASSETS THROUGH ADVANCED CLIMATE RISK ASSESSMENT TOOL

Apreda, Carmela (Italy)¹; Ricciardi, Guglielmo (Italy)¹; Barbato, Giuliana (Italy)¹; Bonfiglio, Alessandro (Italy)¹; Reder, Alfredo (Italy)¹; Mercogliano, Paola (Italy)¹; Capri, Gianluca (Italy)²; Matteo, Mariotti (Italy)²; Giallonardo, Diana (Italy)²; Antonino, Giacomo (Italy)²; Domini, Simona (Italy)²; Scaramella, Claudia (Italy)²
1 - CMCC Foundation, Euro-Mediterranean Center on Climate Change, Italy; 2 - Agenzia del Demanio, Roma, Italy

Session: MA9 – Prognostics and System Health Management **Congress Room 1 - Level 1**

Chairs

Mitra Fouladirad

Daniel Straub

Speaker

Ma, Yuliang OC - (26320) - DEEP LEARNING-BASED ANOMALY DETECTION USING MEMS SENSORS
Chandra, Surath (Germany)¹; Ma, Yuliang (Germany)²; Radović, Dušan (Germany)³; Plahl, Frederik (Germany)²; Mamaev, Ilshat (Germany)⁴; Morozov, Andrey (Germany)²

1 - University of Stuttgart, Stuttgart, Germany; 2 - Institute of Industrial Automation and Software Engineering, University of Stuttgart, Stuttgart, Germany; 3 - Bosch Sensortec GmbH, Reutlingen, Germany; 4 - Proximity Robotics & Automation GmbH, Pfinztal, Germany

Brito Schiele, Benjamin OC - (27847) - AN ADAPTIVE BAYESIAN APPROACH TO REMAINING USEFUL LIFE PROGNOSTICS FOR WIND TURBINE BLADES

Brito Schiele, Benjamin (Netherlands)¹; Teuwen, Julie (Netherlands)²; Eleftheroglou, Nick (Netherlands)¹

1 - Intelligent System Prognostics Group, Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, 2629HS, The Netherlands; 2 - Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, 2629HS, The Netherlands

Koutas, Daniel OC - (27849) - TOWARDS RELIABLE DEEP LEARNING-BASED PROGNOSTICS VIA THE CONTINUOUS-RANKED PROBABILITY SCORE

Brito Schiele, Benjamin (Netherlands)¹; Koutas, Daniel (Germany)²; Salinas-Camus, Mariana (Netherlands)¹; Straub, Daniel (Germany)²; Eleftheroglou, Nick (Netherlands)¹

1 - Intelligent System Prognostics Group, Aerospace Structures and Materials Department, Faculty of Aerospace Engineering, Delft University of Technology, Delft, 2629HS, The Netherlands; 2 - ERA Group TU Munich Munich, Germany

Li, Haochong OC - (26110) - IMAGE-BASED CONDITION RECOGNITION FOR REFINED OIL PIPELINES USING WGAN-AUGMENTED ENHANCED CNN

Li, Haochong (China)¹

1 - No

Denizot, Victoire OC - (26167) - COMBINING SURROGATE DIGITAL TWINS WITH EXTENDED KALMAN FILTERS FOR ROBOT FAILURE DIAGNOSIS

Denizot, Victoire (France)¹; Zeng, Zhiguo (France)²

1 - HEC Paris; 2 - CentraleSupélec

Strohhofer, Jonas OC - (27871) - QUANTITATIVE CHARACTERIZATION OF INDIVIDUAL ALGAE CELLS VIA MACHINE LEARNING-BASED CLUSTERING

Strohhofer, Jonas (Germany)¹; Albaali, Nour (Germany)²; Gehring, Timo (Germany)²; Demaret, Laurent (Germany)¹; Hinz, Marcin (Germany)¹

1 - Munich University of Applied Sciences; 2 - Saarland University of Applied Sciences

Session: MA2 – Decision Making under Uncertainty **Congress Room 2 - Level 1**

Chairs

Kai-Dietrich Wolf

Speaker

Gu, Yiran OC - (26177) - A FUZZY LOGIC–BASED MODEL PREDICTIVE CONTROL FRAMEWORK FOR RISK-AWARE SAFETY CONTROL OF RAILWAY VIRTUAL COUPLING

Gu, Yiran (China)¹; Wu, Yiling (China)¹; Yan, Fei (China)¹

1 - School of Automation and Intelligence, Beijing Jiaotong University

Gu, Yiran OC - (26178) - VISION-BASED PREDICTIVE ENERGY-EFFICIENT TRAIN CONTROL VIA DEEP REINFORCEMENT LEARNING

Zhai, Wenzhen (China)¹; Gu, Yiran (China)¹; Yan, Fei (China)¹; Zhang, Qiang (China)²

1 - School of Automation and Intelligence, Beijing Jiaotong University; 2 - Beijing AI for Rail Technology Co., Ltd

Tan, Kang Rui OC - (26229) - A RESILIENCE-BASED HYBRID SIMULATION-OPTIMIZATION FRAMEWORK FOR DECISION SUPPORT IN RAILWAY DISRUPTION MANAGEMENT

Tan, Kang Rui (United Kingdom)¹; Remenye-Prescott, Rasa (United Kingdom)¹; Prescott, Darren (United Kingdom)¹; Watson, Adam Cooper (United Kingdom)²; Dutton, Andrew (United Kingdom)²

1 - University of Nottingham; 2 - Network Rail

Nguyen, Hoa Thi OC - (26284) - GROUNDING THEORY OF MIND IN EMBODIED AI

Nguyen, Hoa Thi (Norway)¹

1 - Institute for Energy Technology

Kruke, Bjørn Ivar OC - (27729) - UNPACKING JOINT SENSEMAKING IN TRANSBOUNDARY CRISIS MANAGEMENT

Morsut, Claudia (Norway)¹; Kruke, Bjørn Ivar (Norway)¹

1 - University of Stavanger

Borges Leal Da Silva, Lucas OC - (26399) - PHYSICS-BASED PROBABILISTIC MODELING OF RIVERINE FLOODING TO SUPPORT DISASTER RISK REDUCTION

Borges Leal Da Silva, Lucas (Brazil)¹; Contento, Alessandro (China)²; Gardoni, Paolo (United States of America)³

1 - Research Group on Risk Assessment and Modelling in Environment, Assets, Safety, Operations and

Nature – REASON, Universidade Federal de Pernambuco – UFPE, Brazil; 2 - College of Civil Engineering, Fuzhou University, Fuzhou, China; 3 - MAE Center, University of Illinois Urbana-Champaign, Illinois, USA

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Nicolae Brînzei

John Andrews

Speaker

Hassel, Henrik OC - (26215) - RISK-BASED INDUSTRIAL SITE OPTIMIZATION
Runefors, Marcus (Sweden)¹; Hassel, Henrik (Sweden)¹; Ingvarsson, Johan (Sweden)¹; Wilkens, Konrad (Sweden)¹
1 - Lund University

Ayele, Henok Tefera OC - (26126) - AN ACTIVE-LEARNING NEURAL NETWORK FOR STRUCTURAL RELIABILITY ANALYSIS

Ayele, Henok Tefera (Ethiopia)¹
1 - University of Electronic Science and Technology of China

Ayele, Henok Tefera OC - (26149) - AN ACTIVE-LEARNING KRIGING MODEL FOR NON-PROBABILISTIC RELIABILITY ANALYSIS

Ayele, Henok Tefera (Ethiopia)¹
1 - University of Electronic Science and Technology of China

Santana Oliveira, Helton Luiz OC - (26145) - ADVANCING PROCESS SAFETY EVALUATION THROUGH DYNAMIC DATA ENVELOPMENT ANALYSIS: MEASURING EFFICIENCY, LEARNING, AND RISK MITIGATION OUTCOMES

Angulo Meza, Lidia (Brazil)²; Alves Lima, Gilson Brito (Brazil)²; Santana Oliveira, Helton Luiz (Brazil)¹
1 - ABRISCO - Associação Brasileira de Análise de Risco, Segurança de Processo e Confiabilidade; 2 - UFF - Universidade Federal Fluminense

Li, Jiageng OC - (26462) - A RELIABILITY ASSESSMENT METHODOLOGY FOR PRODUCTS IN COLD ENVIRONMENTS BASED ON BAYESIAN NONPARAMETRIC THEORY

Li, Jiageng (China)¹; Ku, Xuetong (China)¹; Lu, Guo (China)²; Lu, Huan (China)²; Hu, Chunping (China)³; Wang, Xiaohui (China)¹; Wang, Xiaohong (China)¹; Fu, Guicui (China)¹; Li, Xiaogang (China)¹; Yao, Jun (China)¹

1 - School of Reliability and Systems Engineering, Beihang University; 2 - AECC Sichuan Gas Turbine Establishment; 3 - China Aviation Engine Nanjing Aero-Propulsion Co., Ltd.

Ribeiro, Guilherme OC - (27707) - HUMAN-CENTRIC OPTIMIZATION OF TRANSPORT HUBS THROUGH REAL PASSENGER FLOW INTEGRATION: ERMESINDE STATION CASE STUDY
Ribeiro, Guilherme (Portugal)¹; Albuquerque, João (Portugal)¹; Infante, Virgínia (Portugal)¹; Andrade, António R. (Portugal)¹
 1 - Instituto de Engenharia Mecânica - IDMEC

Tanguy, Christian OC - (27831) - SHANNON ENTROPY FOR LARGE SHANNON HAMMOCKS
Tanguy, Christian (France)¹
 1 - Orange Research

Tanguy, Christian OC - (27832) - AVAILABILITY OF LINEAR M-CONSECUTIVE-K-OUT-OF-N:F SYSTEMS: SIZE EFFECTS
Tanguy, Christian (France)¹
 1 - Orange Research

El Bakkali, Oumaima OC - (27658) - BOOSTING WARRANTY PREDICTION IN THE AUTOMOTIVE SECTOR USING MACHINE LEARNING: A COMPARATIVE STUDY OF DECISION TREE AND GRADIENT BOOSTING MODELS
El Bakkali, Oumaima (Morocco)¹; Laronde, Remi (France)²; Belcaid, Anas (Morocco)¹; Reklaoui, Kamal (Morocco)¹; Kobi, Abdessamad (France)³
 1 - University of Abdelmalek Essaadi; 2 - Valeo Issoire; 3 - University of Angers

Session: MA4 – Human Factors and Human Reliability **Congress Room 4 - Level 1**

Chairs

Oliver Straeter

Alexandra Fernandes

Speaker

Rigaud, Eric OC - (26232) - SEXUAL DIMORPHISM AND OCCUPATIONAL RISK ASSESSMENT: ISSUES AND PARADOXES
Ferreol, Marine (France)¹; Rigaud, Eric (France)¹
 1 - MINES PARIS

Mosleh, Ali OC - (27723) - HUMAN RELIABILITY ANALYSIS FOR DIGITAL CONTROL ROOMS OPERATION: EXTENDED PHOENIX METHODOLOGY AND CASE STUDY
Cheng, Tingting (United States of America)¹; Mosleh, Ali (United States of America)¹
 1 - The B. John Garrick Institute for the Risk Sciences, UCLA, Los Angeles, USA.

Kruke, Bjørn Ivar OC - (27811) - THE NORWEGIAN POLICE – A LEARNING ORGANISATION? THE CASE OF THE KONGSBERG 2021 MASS CASUALTY EVENT
Henriksen, Steinar Vee (Norway)¹; Kruke, Bjørn Ivar (Norway)²

1 - The Norwegian Police University College; 2 - University of Stavanger

Szpytko, Janusz OC - (27888) - HUMAN BEHAVIOUR UNDERSTANDING IN RELATION TO TECHNOLOGY AND THE ENVIRONMENT

Szpytko, Janusz (Poland)¹

1 - AGH University of Krakow

Straeter, Oliver OC - (27910) - THE IMPORTANCE OF HUMAN RELIABILITY FOR ASSESSING THE RISK OF AI-SYSTEMS ACCORDING TO THE EU AI-ACT

Straeter, Oliver (Germany)¹

1 - University Kassel

Navickienė, Olga OC - (24041) - SEGMENTING HUMAN RELIABILITY RISKS THROUGH EMPLOYER ATTRACTIVENESS: A CLUSTERING APPROACH IN THE MILITARY CONTEXT

Navickienė, Olga (Lithuania)¹; Bekešienė, Svajonė (Lithuania)¹

1 - General Jonas Zemaitis Military Academy of Lithuania

Session: AA11 – Maritime and Offshore Technology **Congress Room 5 - Level 1**

Chairs

Sean Loughney

Zaili Yang

Speaker

Santana Oliveira, Helton Luiz OC - (26121) - LEARNING FROM OFFSHORE WELL ACCIDENTS THROUGH RISK-BASED PROCESS SAFETY AND RESILIENCE ENGINEERING

Santana Oliveira, Helton Luiz (Brazil)¹; Alves Lima, Gilson Brito (Brazil)¹

1 - Universidade Federal Fluminense

Liu, Dapei OC - (26522) - MARITIME TRAFFIC COMPLEXITY ASSESSMENT IN BUSY WATERS

Liu, Dapei (Portugal)¹; Guedes Soares, Carlos (Portugal)¹

1 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Liu, Dapei OC - (26524) - SHIP ABNORMAL POSITION DETECTION AT THE APPROACH TO PORTS

Liu, Dapei (Portugal)¹; Guedes Soares, Carlos (Portugal)¹

1 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Waskito, Dwitya Harits OC - (24055) - A SYSTEMIC HUMAN FACTORS ANALYSIS OF HYDROGEN FUEL SUPPLY IN MARITIME OPERATIONS USING STPA, BN, AND SLIM

<u>Waskito, Dwitya Harits</u> (United Kingdom)¹; Kurt, Rafet Emek (United Kingdom)¹; Turan, Osman (United Kingdom)¹ 1 - Department of Naval Architecture, Ocean, and Marine Engineering, University of Strathclyde, Glasgow
Teixeira, Angelo OC - (26144) - MARITIME TRAFFIC MODELLING AND ABNORMAL DETECTION <u>Teixeira, Angelo</u> (Portugal)¹; Rong, Hao (Portugal)³; Guedes Soares, Carlos (Portugal)² 1 - Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico; 2 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico (IST); 3 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico (IST)
Feldtmann, Ole OC - (26151) - CHASING WIND WITH WIND-ASSISTED PROPULSION: SEAMANSHIP OR BUTTON-PRESSING? Lein Aalberg, Asbjørn (Norway)¹; Bye, Rolf Johan (Norway)¹; Lamvik, Gunnar (Norway)¹; Berg, Tor Einar (Norway)²; <u>Feldtmann, Ole</u> (Norway)³ 1 - SINTEF AS; 2 - SINTEF Ocean AS; 3 - Western Norway University of Applied Sciences
Pareliussen, Bjarne OC - (26287) - THE SIGNIFICANCE OF TRUST IN MAINTAINING SAFETY DURING DIGITAL TRANSFORMATIONS IN THE MARITIME INDUSTRY <u>Pareliussen, Bjarne</u> (Norway)¹; Wahl, Aud (Norway)¹; Giskeødegård, Marte (Norway)¹ 1 - NTNU
Yamada, Luciana OC - (26510) - A RELIABILITY-CENTRIC DESIGN OPTIMIZATION FRAMEWORK FOR HYBRID OFFSHORE RENEWABLE ENERGY SYSTEMS Golalikhani, Masoud (Portugal)¹; <u>Yamada, Luciana</u> (Portugal)¹; Barbosa, Flávia (Portugal)¹; Guimarães, Luís (Portugal)¹ 1 - INESC TEC, Faculty of Engineering, University of Porto

SS-19: Safety Challenges and Emerging Risks of the Future Healthcare and Medtech Industry Meeting room 6 - Level -1

Chairs

Bernardo Innocenti

Roberto Filippini

Speaker

Filippini, Roberto SS - (27755) - THE ROLE OF INNOVATION FOR MEDTECH INDUSTRY: CHALLENGES AND EMERGING RISKS

Filippini, Roberto (Italy)¹; Innocenti, Bernardo (Belgium)²

1 - Independent consultant, Italy; 2 - Université Libre de Bruxelles, Belgium

Guarino, Simone (Rome) SS - (27696) - DYNAMIC VULNERABILITY ASSESSMENT FOR CONNECTED HEALTHCARE SYSTEMS VIA CONTINUOUS-TIME BAYESIAN NETWORKS Perone, Stefano (Italy)¹; Dori, Luca (Italy)¹; Giorgi, Arianna (Italy)¹; <u>Guarino, Simone</u> (Italy)¹ 1 - Unit of Automatic Control, Department of Engineering, Università Campus Bio-Medico, Rome, Italy
Elahi, Bijan SS - (27659) - FUTURE SAFETY CHALLENGES AND EMERGING RISKS IN THE EVOLVING MEDTECH ECOSYSTEM <u>Elahi, Bijan</u> (United States of America)^{1,2,3} 1 - MedTech Safety; 2 - Drexel University (USA); 3 - Eindhoven University of Technology (Netherlands)
Filippini, Roberto SS - (28937) - INTRODUCTION OF THE RISK MANAGEMENT MATURITY MODEL (RMMM) INITIATIVE FOR HEALTHCARE AND MEDICAL-PRODUCT SYSTEMS Wu, Fubin (United States of America)¹; <u>Filippini, Roberto</u> (Italy)² 1 - Co-founder and president of GessNet, United States; 2 - Independent consultant, Italy

Session: AA14 – Occupational Safety **Meeting room 7 - Level -1**

Chairs

ANASTACIO PINTO GONÇALVES FILHO

Anna-Lisa Osvalder

Speaker

Osvalder, Anna-Lisa OC - (26172) - WHY CHIMNEY SWEEPS SKIP SAFETY – BARRIERS TO PROTECTIVE EQUIPMENT USE IN A HIGH-RISK INDUSTRY

Osvalder, Anna-Lisa (Sweden)¹; Borell, Jonas (Sweden)²

1 - Chalmers University of Technology; 2 - Lund University

Morozov, Andrey OC - (26221) - ACHIEVING COGNITIVE SAFETY FOR HUMAN-ROBOT COLLABORATION

Plahl, Frederik (Germany)¹; Katranis, Georgios (Germany)²; Atif, Muhammad (Italy)³; Asswad, Anas (Italy)⁴; Zoppi, Tommaso (Italy)³; Brancati, Francesco (Italy)⁴; Morozov, Andrey (Germany)²; Mamaev, Ilshat (Germany)¹

1 - Proximity Robotics & Automation GmbH; 2 - University of Stuttgart; 3 - University of Florence; 4 - ResilTech S.R.L.

Sjøen, Daniel OC - (26294) - SEAMANSHIP: NAVIGATING AN ELUSIVE CORNERSTONE OF SAFETY-CRITICAL MARITIME OPERATIONS

Sandhåland, Hilde (Norway)¹; Bøe, Heine (Norway)¹; Trygg Månsson, Joakim (Norway)¹; Sjøen, Daniel (Norway)¹

1 - Western Norway University of Applied Sciences

Skaufel Kilskar, Stine OC - (26359) - ACTIVITIES AND BEST PRACTICES FOR ENHANCING SUBCONTRACTOR ENGAGEMENT IN CONSTRUCTION SAFETY

Winge, Stig (Norway)¹; Skaufel Kilskar, Stine (Norway)¹

1 - SINTEF Digital

Kwei-Narh, Prosper OC - (26422) - DO INDIVIDUAL DIFFERENCE FACTORS MATTER IN TECHNOLOGICALLY ADVANCED CONTROL ROOMS?

Kwei-Narh, Prosper (Norway)¹; Reegård, Kine (Norway)¹; Arnulf, Jan Ketil (Norway)²

1 - Institute for Energy Technology, Norway; 2 - BI Norwegian Business School

Samuelsson, Sofia OC - (26436) - INTEGRATING ROAD SAFETY INTO OCCUPATIONAL HEALTH: A CO-CREATION STUDY WITH HOME CARE STAFF AND SERVICE TECHNICIANS IN SKILLED TRADES DRIVING FOR WORK

Samuelsson, Sofia (Sweden)¹; Johansson, Mikael (Sweden)¹; Makris, Melina (Sweden)¹; Borell, Jonas (Sweden)²; Osvalder, Anna-Lisa (Sweden)¹

1 - Chalmers University of Technology; 2 - Lund University

Session: AA2 – Chemical and Process Industry **Meeting room 8 - Level -1**

Chairs

Myrto Konstantinidou

Karol Kowal

Speaker

Zhang, Muchen (Barcelona) OC - (26349) - NUMERICAL STUDY OF HYDROGEN DISPERSION IN A STATIONARY NI-CD BATTERY ROOM UNDER MULTIPLE LEAK CONDITIONS

Zhang, Muchen (China)¹; Muñoz Messineo, Miguel (Spain)²; Bartumeus Vallesp' l, David (Spain)²; Vacca, Pascale (Spain)¹; Planas Cuchi, Eulàlia (Spain)¹

1 - Centre for Technological Risk Studies (CERTEC), Universitat Politecnica de Catalunya, Spain; 2 - Process Safety and Major Accidents Department, NOVOTEC, Spain

Liu, Yiliu OC - (26441) - RELIABILITY CENTERED MAINTENANCE ANALYSIS OF A GREEN HYDROGEN PRODUCTION PLANT: CHALLENGES AND FUTURE

Tuhi, Farhana Yasmine (Norway)¹; Bucelli, Marta (Norway)²; Liu, Yiliu (Norway)¹

1 - Norwegian university of science of technology; 2 - SINTEF Energy AS

Zhai, Jiyu OC - (27669) - INTELLIGENT SEMANTIC MATCHING MODEL OF HIDDEN DANGERS AND REGULATIONS IN THE FIELD OF OIL AND GAS PRODUCTION SAFETY

Zhai, Jiyu (China)¹; Chen, Yiyue (China)¹; Wang, Shunyi (China)¹; Liu, Junting (China)¹; Han, Jiangyang (China)¹

1 - CNPC RESEARCH INSTITUTE OF SAFETY&ENVIRONMENT TECHNOLOGY

Naake, Dominik Robert OC - (27792) - MULTI-SCALE LOAD COLLECTIVE MODELLING OF ELECTROLYSER FRAMES UNDER MARKET-DRIVEN OPERATION

Naake, Dominik Robert (Netherlands)¹

1 - Battolyser Systems

Santana Oliveira, Helton Luiz OC - (26120) - TOWARDS A GENUINE CONVERGENCE OF PROCESS SAFETY AND ASSET MANAGEMENT: AN INTEGRATIVE FRAMEWORK WITH COMPOSITE METRICS

Santana Oliveira, Helton Luiz (Brazil)¹; Alves Lima, Gilson Brito (Brazil)²

1 - ABRISCO - Associação Brasileira de Análise de Risco, Segurança de Processo e Confiabilidade; 2 - Universidade Federal Fluminense

SS-13: Climate Change and Extreme Weather Events: Impacts on Critical Infrastructure Risk and Resilience

Meeting room 9 - Level -1

Chairs

Maria Valentina Clavijo Mesa

Speaker

Ampofo, Stephen Kwadwo Ampoma SS - (26535) - CORROSION RELATED RISKS AND CLIMATE ADAPTATION FOR COASTAL REINFORCED CONCRETE INFRASTRUCTURE IN FRANCE

Ampofo, Stephen Kwadwo Ampoma (Ghana)¹; Varma, Aditya Kumar (India)¹; Jiménez Aguilar, Brandon Henry (Bolivia)¹; Mukundan, Meenu (India)¹; Rico Rangel, Jonnatan José (Colombia)¹; Bastidas-Arteaga, Emilio (Colombia)¹; Cherif, Rachid (Algeria)¹

1 - Laboratoire des Sciences de l'Ingénieur pour l'Environnement, University of La Rochelle, La Rochelle France

Logan, Tom SS - (26125) - QUANTIFYING CASCADING RISK ACROSS PHYSICAL, ECONOMIC, AND SOCIAL SYSTEMS

Logan, Tom (Portugal)^{1,2}; Brunner, Logan (Portugal)^{1,2}; Anderson, Mitchell (Portugal)²

1 - University of Canterbury; 2 - Urban Intelligence Ltd

Garmabaki, A.H.S SS - (26173) - SCENARIO-BASED PREDICTION OF CLIMATE-RELATED RAILWAY FAILURES

Soleimani-Chamkhorami, Khosro (Sweden)^{2,3}; Garmabaki, A.H.S (Sweden)²; Karbalaie, Abdolamir (Sweden)²; Famurewa, Stephen (Sweden)¹

1 - Swedish Transport Administration, Luleå, Sweden; 2 - Department of Civil, Environmental, and Natural Resources Engineering, Division of Operation, Maintenance Engineering, Luleå University of Technology, Luleå 97187, Sweden.; 3 - Department of Computer Engineering, Na.C., Islamic Azad University, Najafabad, Iran

Ding, Dong SS - (26210) - PROBABILISTIC ANALYSIS OF ICE SHEDDING RISK FROM HIGH-SPEED TRAIN BOGIES UNDER COLD CLIMATE CONDITIONS

Ding, Dong (Portugal)¹; Cai, Xinyu (Portugal)¹; Zheng, Kun (Portugal)¹; Cai, Yelin (Portugal)¹; Wang, Xinyu (Portugal)²

1 - Chang'an University, China; 2 - University of Technology of Compiègne, France

12:30

14:00 **Lunch** **Forum Braga Foyer - Level 0**

14:00

15:30 **Parallel Sessions**

Session: AA6 – Energy **Grand Auditorium - Level 0**

Chairs

Jonas Johansson

Speaker

Rey, Rémy (Stockholm) OC - (26340) - EMPOWERING OPERATORS: INVESTIGATING OPERATIONAL CHALLENGES IN AUTOMATED POWER SYSTEM CONTROL ROOMS USING APPLIED COGNITIVE TASK ANALYSIS

Larrat, Guillaume (Sweden)¹; Rey, Rémy (Sweden)¹; Svensson, Signe (Sweden)²

1 - KTH, Royal Institute of Technology; 2 - Chalmers University of Technology

Dimuro Duckwitz, Victoria OC - (26363) - NATECH RISKS IN REPURPOSED HYDROGEN PIPELINES: TRIGGERING EVENTS, VULNERABILITIES, AND MITIGATION STRATEGIES

Dimuro Duckwitz, Victoria (Norway)¹; Paltrinieri, Nicola (Norway)¹; Campari, Alessandro (Norway)¹; Tzioutzios, Dimitrios (Norway)¹

1 - Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, 7030 Trondheim, Norway

Hocking, Graeme OC - (26365) - PROBABILISTIC RISK ASSESSMENT OF BIRD-TURBINE COLLISIONS USING FLIGHT PATH MODELS

Shemehsavar, Soudabeh (Australia)¹; Hocking, Graeme (Australia)¹; Maller, Ross (Australia)²; Mansoor, Wafaa (Australia)¹

1 - Murdoch University; 2 - Australian National University

Yamada, Luciana OC - (26430) - DESIGN OPTIMIZATION OF A WIND-TIDE HYBRID ENERGY SYSTEM IN THE RIVER MERSEY

Yamada, Luciana (Portugal)¹; Barbosa, Flávia (Portugal)¹; Guimarães, Luís (Portugal)¹; Iris, Çagatay (United Kingdom)²

1 - INESC TEC, Faculty of Engineering, University of Porto; 2 - School of Management, University of Liverpool

Vatn, Jørn OC - (26437) - ENERGY SUPPLY SECURITY IN REMOTE AREAS

Vatn, Jørn (Norway)^{1,2}

1 - NTNU - Norwegian University of Science and Technology; 2 - Norwegian University of Science and Technology

Pedersen, Tom Ivar OC - (26448) - STATUS AND FUTURE FOR MODELS IN DATA-DRIVEN ASSET MANAGEMENT IN SCANDINAVIAN HYDRO POWER COMPANIES Istad, Maren (Norway)¹; <u>Pedersen, Tom Ivar</u> (Norway)¹; Solemslie, Bjørn Winther (Norway)² 1 - SINTEF Energy Research; 2 - NINA
Kulev, Nikolai OC - (26449) - CATALOGUE OF HIGH-IMPACT LOW-PROBABILITY DISTURBANCE SCENARIOS IN CLUSTERS OF OFFSHORE WIND FARMS <u>Kulev, Nikolai</u> (Germany)¹; Klemm, Jannik (Germany)¹; Niemi, Arto (Germany)¹; Sill Torres, Frank (Germany)¹ 1 - German Aerospace Center (DLR), Institute for the Protection of Maritime Infrastructures
Van Liedekerke, Ambra OC - (26337) - POWER SYSTEM ADEQUACY UNDER HIGH RENEWABLE PENETRATION: THE ROLE OF EV AND HEAT PUMP FLEXIBILITY <u>Van Liedekerke, Ambra</u> (Switzerland)¹; Gjorgiev, Blazhe (Switzerland)¹; Sansavini, Giovanni (Switzerland)¹ 1 - Reliability and Risk Engineering Laboratory, ETH Zürich, Switzerland

Session: MA11 – Risk assessment **Small Auditorium - Level 1**

Chairs

Gueorgui Petkov

Stefan Bracke

Speaker

Rodrigues, Juliana OC - (26196) - AI-DRIVEN MUTAGENIC SCREENING TOOL OF PLASTIC MONOMERS FOR INSTANT SSBD ASSESSMENT
Ferreira, Germán (Portugal)¹; Rodrigues, Juliana (Portugal)¹; Ferraz-Caetano, José (Portugal)¹; Nogueira, António (Portugal)¹
1 - HOLOSS – Holistic and ontological solutions for sustainability

Chen, Honghao OC - (26242) - INHERENT SAFETY ASSESSMENT FOR OFFSHORE CHEMICAL-BASED ENERGY STORAGE SYSTEMS UNDER HYDROMETEOROLOGICAL HAZARDS
Chen, Honghao (China)¹; Tzioutzios, Dimitrios (Greece)¹; Liu, Yiliu (China)¹
1 - Norwegian University of Science and Technology

Flehmg, Niclas OC - (26253) - BEYOND COMPONENT FAILURES: A SYSTEM-THEORETIC HAZARD ANALYSIS FOR AI-ENABLED SYSTEMS
Flehmg, Niclas (Germany)¹; Lundteigen, Mary Ann (Norway)¹; Yin, Shen (China)¹
1 - Norwegian University of Science and Technology

Picoco, Claudia OC - (26289) - TACKLING THE COMPLEXITY OF PRA MODELS: MEASURE A FAULT TREE
Picoco, Claudia (France)¹; Sauvaget, François (France)¹; Hibti, Mohamed (France)¹

1 - EDF R&D

Giannini, Leonardo OC - (26300) - ENABLING DRY LOW EMISSION HYDROGEN COMBUSTION IN AN
EXISTING COMBINED HEAT AND POWER PLANT: A PRELIMINARY RISK ASSESSMENT

Bucelli, Marta (Norway)¹; Vanni, Nicola (Italy)²; Giannini, Leonardo (Norway)¹; Quartieri, Eugenio
(Italy)²; Bisio, Valentina (Italy)²; Cerutti, Matteo (Italy)²; Gattuso, Marco (Italy)²; Calamari, Danilo
(Italy)³

1 - SINTEF Energy Research; 2 - Baker Hughes; 3 - LUCART

Kleiveland, Rune Natten OC - (26303) - DYNAMIC RISK ASSESSMENT OF HYDROGEN PRODUCTION UNITS
Kleiveland, Rune Natten (Norway)¹; Lindholm, Ingeborg Barstad (Norway)¹; Das, Subhashis (Norway)¹;
Hektor, Erik Andreas (Norway)¹

1 - DNV

Weng, Joanna OC - (26314) - AI-ASSISTED FUNCTIONAL SAFETY ASSESSMENT: TOWARDS AUTOMATED
CONSISTENCY AND COMPLIANCE CHECKING

Weng, Joanna (Switzerland)¹

1 - Zurich University of Applied Sciences

Aranda, Maria Agustina OC - (26381) - INTEGRATING SAFETY, RISK ANALYSIS, AND DECISION SUPPORT
TO ADDRESS ZOONOTIC RISKS IN NATURE-BASED SOLUTIONS FOR CLIMATE ADAPTATION

Aranda, Maria Agustina (France)^{1,3}; Bérenguer, Christophe (France)²; Leblond, Agnès (France)³;
Tacnet, Jean-Marc (France)¹

1 - Univ. Grenoble Alpes, CNRS, INRAE, IRD, Grenoble INP, IGE, 38000 Grenoble, France; 2 - Univ.
Grenoble Alpes, CNRS, Grenoble INP, GIPSA-lab, 38000 Grenoble, France; 3 - UMR EPIA, INRAE,
VetAgro Sup, University of Lyon, 69280 Marcy l'Etoile, France

Session: MA9 – Prognostics and System Health Management **Congress Room 1 - Level 1**

Chairs

Mitra Fouladirad

Daniel Straub

Speaker

Rastin, Zahra OC - (26222) - ADVANCED POD-BASED EVALUATION OF LOAD-DEPENDENT
PERFORMANCE IN MACHINE LEARNING DAMAGE DIAGNOSIS

Liebeton, Jonathan (Germany)¹; Rastin, Zahra (Germany)¹; Söffker, Dirk (Germany)¹

1 - Chair of Dynamics and Control, University of Duisburg-Essen, 47057 Duisburg, Germany

Krivtsov, Vasiliy OC - (26233) - ENHANCING DRIVETRAIN RELIABILITY: A NOVEL METHOD FOR DETECTION, DIAGNOSIS AND PROGNOSIS OF FAILURES IN COOLANT PUMP USING MACHINE LEARNING

Mistry, Viren (Germany)¹; Jacobs, Georg (Germany)¹; Krivtsov, Vasiliy (United States of America)²; Siebertz, Karl (Germany)²; Barrette, Tim (United States of America)²; Wischmann, Stefan (Germany)¹
1 - Institute for Machine Elements and Systems Engineering, RWTH Aachen University; 2 - Ford Motor Company

Herrmann, Tim OC - (26302) - CYCLOSTATIONARY VIBRATION ANALYSIS AND ADVANCED SIGNAL PRE-PROCESSING FOR BEARING FAULT DETECTION IN ELECTRIC DRIVE UNITS

Herrmann, Tim (Germany)¹; Dazer, Martin (Germany)¹
1 - University of Stuttgart

Koutas, Daniel OC - (26318) - REPLACEMENT POLICIES FOR MULTI-COMPONENT SYSTEMS

Koutas, Daniel (Germany)¹; Straub, Daniel (Germany)¹
1 - Technical University of Munich

Heiries, Vincent OC - (26330) - A NOVEL PHYSICS-BASED CAUSAL HEALTH INDICATOR FOR FUEL CELL REMAINING USEFUL LIFE ONLINE ESTIMATION UNDER DYNAMIC CONDITIONS

Roatta, Misael (France)¹; Morvillier, Raphaël (France)¹; Heiries, Vincent (France)¹
1 - Univ. Grenoble Alpes, CEA, Leti, F-38000 Grenoble, France

Tang, Quang-Hieu OC - (26331) - AN AGE-DEPENDENT HIDDEN SEMI-MARKOV MODEL WITH MULTIPLE STATE-DEPENDENT AGING FACTORS FOR REMAINING USEFUL LIFE PROGNOSIS

Tang, Quang-Hieu (Vietnam)¹; Huynh, Khac-Tuan (Vietnam)¹; Kharouf, Malika (France)¹
1 - University of Technology of Troyes

Zhang, Jinrui OC - (26338) - PHYSICS-GUIDED GRAPH-LIQUID NEURAL NETWORKS FOR EXPLAINABLE AND REAL-TIME PROGNOSTICS OF LITHIUM-ION BATTERIES

Zhang, Jinrui (China)¹; Zhu, Kehui (China)¹; Wang, Yanxue (China)¹
1 - School of Electromechanical and Vehicle Engineering, Beijing University of Civil Engineering and Architecture, China

Session: MA2 – Decision Making under Uncertainty **Congress Room 2 - Level 1**

Chairs

Daniel Lichte*

Daniel Oliveira

Speaker

Glette-Iversen, Ingrid OC - (26086) - ON THE USE OF THE ALARP PRINCIPLE FOR HYDROGEN SYSTEMS
Glette-Iversen, Ingrid (Norway)¹; Tømmerås Selvik, Jon (Norway)¹

1 - University of Stavanger

Lathourakis, Christos OC - (26104) - DEEP REINFORCEMENT LEARNING FOR LIFE-CYCLE MAINTENANCE PLANNING OF LARGE INFRASTRUCTURE NETWORKS

Lathourakis, Christos (Greece)¹; Martínez, Andrés (Peru)¹

1 - Netherlands Organisation for Applied Scientific Research (TNO)

Yuan, Ye OC - (26208) - MULTI-SKILL RESOURCE CONSTRAINED PROJECT SCHEDULING MODEL CONSIDERING TARDINESS IGNORANCE

Yuan, Ye (United Kingdom)¹; Du, Yuanwei (China)²; Brito, Mario P (United Kingdom)¹; Zhou, Qin (United Kingdom)¹

1 - University of Southampton; 2 - Yunnan University

Srinivasan, Arvind OC - (26324) - RESILIENCE OF COMMUNITY ENERGY SYSTEMS TO LONG DURATION POWER OUTAGES

Srinivasan, Arvind (Switzerland)¹; Gjorgiev, Blazhe (Switzerland)¹; Sansavini, Giovanni (Switzerland)¹

1 - Institute of Energy and Process Engineering, ETH Zurich

Shi, Guo OC - (26378) - BAYESIAN LEARNING–BASED MAINTENANCE OPTIMISATION UNDER COMPONENT HETEROGENEITY AND DYNAMIC OPERATING CONDITIONS

Shi, Guo (United Kingdom)¹; Liu, Bin (United Kingdom)¹; Walls, Lesley (United Kingdom)¹

1 - University of Strathclyde

Viaron, Kimberley OC - (26400) - INTEGRATING MCDA METHODS INTO THE DIGITAL TWIN'S DECISION-MAKING LOOP

Viaron, Kimberley (France)^{1,2}; Rauffet, Philippe (France)^{1,2}; Julien, Nathalie (France)^{1,2}; Petr, Christine (France)^{1,3}

1 - University of South Brittany, Lorient, France; 2 - Lab-STICC (UMR CNRS 6285); 3 - Laboratoire LEGO, University of South Brittany, Vannes, France

Petkov, Gueorgui OC - (26404) - JUDGMENT UNDER UNCERTAINTY AND COMPARISON OF THE FOUR COLOR PARADOXES

Petkov, Gueorgui (Bulgaria)¹

1 - Sofia University St. Kliment Ohridski

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Nicolae Brînzei

John Andrews

Speaker

Mendes Araújo, Lavínia Maria OC - (27894) - QUANTUM FAULT TREE ANALYSIS FOR FAILURE PROBABILITY ESTIMATION OF OIL WELL EQUIPMENT UNDER DEVELOPMENT

Mendes Araújo, Lavínia Maria (Brazil)¹; Bezerra Da Gama Neto, Samuel (Brazil)¹; Didier Lins, Isis (Brazil)¹; Novaes Pires Leite, Gustavo (Brazil)¹

1 - Universidade Federal de Pernambuco (UFPE)

Mendes Araújo, Lavínia Maria OC - (27897) - SYSTEMATIC LITERATURE REVIEW ON QUANTUM COMPUTING METHODS FOR COMBINATORIAL OPTIMIZATION PROBLEMS IN RELIABILITY AND RISK ENGINEERING

Alvez Bezerra, Vitoria Milena (Brazil)¹; Mendes Araújo, Lavínia Maria (Brazil)¹; Didier Lins, Isis (Brazil)¹

1 - Universidade Federal de Pernambuco (UFPE)

Dazer, Martin OC - (24039) - OPTIMAL PLANNING OF ACCELERATED RELIABILITY DEMONSTRATION TESTS FOR THE WEIBULL MODEL

Grundler, Alexander (Germany)¹; Dazer, Martin (Germany)²

1 - Robert Bosch GmbH; 2 - Institute of Machine Components, University of Stuttgart

Fu, Guangtao OC - (24060) - ROLLING OPTIMIZATION FOR REFINED OIL LOGISTICS UNDER UNCERTAINTY: ENHANCING RELIABILITY AND EFFICIENCY

Fu, Guangtao (China)¹; Qiu, Rui (China)¹; Li, Haocong (China)²; Tu, Renfu (China)¹; Dong, Bozhuo (China)¹; Liang, Yongtu (China)¹

1 - the College of Mechanical and Transportation Engineering, China University of Petroleum (Beijing)•Beijing Key Laboratory of Urban Oil and Gas Distribution Technology; 2 - the College of Artificial Intelligence, China University of Petroleum (Beijing)

Li, Chun-Yen OC - (26091) - A DYNAMIC HUMAN RELIABILITY ANALYSIS APPROACH USING CONTINUOUS MARKOV CHAIN MONTE CARLO METHOD: MODELLING HUMAN ERROR PROBABILITY UNDER PERSISTENT ENVIRONMENTAL DYNAMICS

Li, Chun-Yen (Japan)¹; Kirimoto, Yukihiro (Japan)¹

1 - Central Research Institute of Electric Power Industry (CRIEPI)

Nishat, Mirza Muntasir OC - (26097) - ARTIFICIAL INTELLIGENCE IN CONSTRUCTION SAFETY: A DECADE OF PROGRESS, CHALLENGES, AND FUTURE IMPLICATIONS

Nishat, Mirza Muntasir (Norway)¹; Orvik, Casper Pilskog (Norway)¹; Olsson, Nils O.E. (Norway)¹; Rauzy, Antoine (Norway)¹

1 - Norwegian University of Science and Technology

Geere, Nicholas OC - (26424) - PREDICTING TRACK GEOMETRY DATA USING MULTIMODAL METHODS WITH NEURAL NETWORK MODELS

Geere, Nicholas (United Kingdom)¹; Remenyte-Prescott, Rasa (United Kingdom)¹; Egede, Joy (United Kingdom)²; Dean, Robert (United Kingdom)³

1 - Resilience Engineering Research Group, University of Nottingham, UK; 2 - School of Computer Science, University of Nottingham, UK; 3 - London St. Pancras High-Speed, 90 York Way, London, N1 9AG, UK

Chairs

Awwal Arigi*

Alessandra Lopes Carvalho

Speaker

Gela, Zymer OC - (26160) - VISUAL STRATEGIES AND PREDICTIVE EYE MOVEMENTS AMONG YOUNG A1 MOTORCYCLE RIDERS

Wigum, Jan Petter (Norway)¹; Jain, Shubham (Norway)²; Moe, Dagfinn (Norway)²; Helmersen Bogfjellmo, Jan Petter (Norway)³; Gela, Zymer (Norway)³; Minsaas Bromstad, Simon (Norway)³; Brune Gjertsen, Anders (Norway)³; Wold, Thomas (Norway)³

1 - Jan Petter Wigum; 2 - SINTEF Community; 3 - Nord University

Gela, Zymer OC - (26162) - UNDERSTANDING YOUNG RIDERS' BEHAVIOUR THROUGH EYE-TRACKING AND IN-DEPTH INTERVIEWS

Wigum, Jan Petter (Norway)¹; Wold, Thomas (Norway)¹; Helmersen Bogfjellmo, Petter (Norway)¹; Brune Gjertsen, Anders (Norway)¹; Minsaas Bromstad, Simon (Norway)¹; Gela, Zymer (Norway)¹

1 - Nord University

Gela, Zy OC - (26163) - COGNITIVE PROCESSING AND DECISION-MAKING AMONG YOUNG MOTORCYCLE RIDERS

Torquato Steinbakk, Renata (Norway)²; Wold, Thomas (Norway)¹; Wigum, Jan Petter (Norway)¹; Gela, Zy (Norway)¹; Minsaas Bromstad, Simon (Norway)¹; Helmersen Bogfjellmo, Jan Petter (Norway)¹

1 - Nord university; 2 - Trygg Trafikk

Makris, Melina OC - (26169) - PASSENGER PERCEPTIONS OF SAFETY IN EVERYDAY TRANSPORT: THE INFLUENCE OF DRIVER BEHAVIOUR AND VEHICLE RELIABILITY

Makris, Melina (Sweden)¹

1 - Chalmers University of Technology

Guennoc, Fanny OC - (26250) - FROM USE-CASE TO SCENARIO: A PROPOSAL FOR AN ERGONOMICAL METHODOLOGY FACILITATING AN INTERDISCIPLINARY DIALOGUE IN A DIGITAL TWIN DESIGN PROCESS

Guennoc, Fanny (France)¹; Colcanap, Mélanie (France)¹; Simon, Loïck (France)²; Julien, Nathalie (France)¹; Guerin, Clement (France)¹

1 - Lab-STICC; 2 - Is2n

Pornroongruengchok, Weerawat OC - (26260) - COMPARATIVE STUDY OF WORKING CULTURE FOR SAFETY IMPROVEMENT BETWEEN OPERATORS AND USERS IN ASEAN RESEARCH REACTORS

Pornroongruengchok, Weerawat (Thailand)^{1,2,3}; Vechgama, Wasin (Thailand)^{1,2,3}; Park, Jinkyun (Korea, Republic of)^{4,5}

1 - Thailand Academy of Science; 2 - Thailand Institute of Nuclear Technology (Public Organization); 3

- Mahidol University; 4 - Korea Atomic Energy Research Institute; 5 - Korea National University of Science and Technology

Kancev, Dusko OC - (26327) - SEISMIC-HRA METHODS IMPLEMENTATION IN A REALISTIC-NPP MODEL: COMPARATIVE ANALYSIS ON A PLANT-LEVEL RISK CONTRIBUTION

Kancev, Dusko (Switzerland)¹; Dirksen, Gerben (Germany)²; Hausherr, Rainer (Switzerland)¹

1 - NPP Goesgen-Daeniken AG; 2 - Framatome GmbH

Colim, Ana OC - (26336) - NEW CHALLENGES FOR ERGONOMICS & HUMAN FACTORS IN THE DIGITAL TRANSFORMATION

Colim, Ana (Portugal)^{1,2}; Cardoso, André (Portugal)¹; Bicho, Estela (Portugal)²; Alves, Carla (Portugal)²; Miranda, Beatriz (Portugal)¹; Fernandes, Duarte (Portugal)¹; Moreira, Filipe (Portugal)¹; Alexandre, Rosana (Portugal)¹

1 - DTx Colab, Portugal; 2 - Algoritmi Centre, University of Minho, Portugal

Session: AA11 – Maritime and Offshore Technology **Congress Room 5 - Level 1**

Chairs

Sean Loughney

Zaili Yang

Speaker

Guarguaglini, Michela OC - (26315) - SAFETY AND SECURITY RISK ASSESSMENT OF DANGEROUS GOODS CARRIERS APPROACHING PORT AREAS

Guarguaglini, Michela (Italy)¹; Landucci, Gabriele (Italy)¹; Dentone, Dino (Italy)²; Casson Moreno, Valeria (Italy)¹

1 - Department of Civil and Industrial Engineering – University of Pisa, Pisa, Italy; 2 - DataCH Technologies srl, Livorno, Italy

Feldtmann, Ole Nikolaus OC - (26332) - OPERATIONAL AND HUMAN DIMENSIONS OF WIND-ASSISTED PROPULSION SYSTEMS: A SYSTEMATIC REVIEW INFORMED BY NEWER SAFETY PARADIGMS

Feldtmann, Ole Nikolaus (Norway)¹; Oltedal, Helle Asgjerd (Norway)¹; Fjeld, Guro Persdotter (Norway)¹

1 - Western Norway University of Applied Sciences

Custódio, Anderson OC - (26354) - A HYBRID FUZZY-MONTE CARLO AND DEA FRAMEWORK FOR RISK-BASED INSPECTION OF FLEXIBLE RISERS

Custódio, Anderson (Brazil)¹; Vaillant, Alyson (Brazil)¹; Ferreira, Lucas (Brazil)¹; Netto, Theodoro (Brazil)²; Lourenço, Marcelo (Brazil)²; Ferraz, Caroline (Brazil)²; Meirelles, Eduardo (Brazil)²; Honorato, Henrique (Brazil)²

1 - PETROBRAS; 2 - Federal University of Rio de Janeiro

Seo, Mu-Yeong OC - (26440) - ANALYSIS OF EXPERIMENTAL STUDIES FROM EUROPEAN PROJECTS ON THE SAFETY OF LIQUEFIED HYDROGEN STORAGE TANKS: INSIGHTS AND RESEARCH DIRECTIONS
Seo, Mu-Yeong (Norway)¹; Kim, Hyungju (Norway)¹; Kim, Hyun-Seok (Korea, Republic of)²; Hong, Davis (Korea, Republic of)²; Kim, Gun-Woo (Korea, Republic of)²

1 - Norwegian University of Science and Technology; 2 - Korea Research Institute of Ships and Ocean engineering

Psomas, Panagiotis OC - (26459) - DEPENDABILITY ASSESSMENT OF A BLADE PITCHING MECHANISM IN TIDAL STREAM TURBINES

Psomas, Panagiotis (Greece)¹; Markopoulos, Thomas (Greece)¹; Platis, Agapios (Greece)¹; Koutras, Vasilis (Greece)¹; Dagkinis, Ioannis (Greece)¹

1 - University of the Aegean

Sumon, Mir Md Ashfaq OC - (26466) - DEMONSTRATING A MODEL-BASED SYSTEMS ENGINEERING APPROACH FOR THE APPROVAL OF MARITIME AUTONOMOUS SURFACE SHIPS OPERATION: THE AUTONOMOUS MOORING SYSTEM USE CASE

Sumon, Mir Md Ashfaq (Bangladesh)¹; Lien Wenersberg, Lars Andreas (Norway)²; Utne, Ingrid Bouwer (Norway)¹; Hessen, Claudia (Norway)³; Thom, Fran (Norway)³; Rokseth, Børge (Norway)¹

1 - Norwegian University of Science and Technology; 2 - SINTEF Ocean; 3 - Kongsberg Maritime

INTRODUCTION TO MEDICAL DEVICE SAFETY RISK MANAGEMENT (ISO 14971) Part I **Meeting room 6 - Level -1**

Session: AA14 – Occupational Safety **Meeting room 7 - Level -1**

Chairs

ANASTACIO PINTO GONÇALVES FILHO

Anna-Lisa Osvalder

Speaker

Borell, Jonas OC - (26464) - HUMAN-ROBOT WORK COLLABORATION IN CONSTRUCTION: INDUSTRY PERSPECTIVES ON A CHANGING RISK LANDSCAPE

Borell, Jonas (Sweden)¹; Osvalder, Anna-Lisa (Sweden)²

1 - Lund university; 2 - Chalmers university of technology

Filho, Anastacio OC - (27764) - STUDY OF SAFETY CULTURE IN PUBLIC UNIVERSITIES: A CASE STUDY AT THE FEDERAL UNIVERSITY OF BAHIA

Souza, Brenna (Brazil)¹; Filho, Anastacio (Brazil)¹; Freires, Francisco (Brazil)¹

1 - Federal University of Bahia

Session: AA13 – Nuclear Industry **Meeting room 8 - Level -1**

Chairs

Francesco Di Maio

Claudia Picoco

Speaker

Vechgama, Wasin OC - (26100) - COMPARISON OF SEVERITY SCALES OF HUMAN-MADE ACCIDENTS OF NUCLEAR AND CHEMICAL INDUSTRIES

Vechgama, Wasin (Thailand)¹; Silva, Kampanart (Thailand)^{2,3}

1 - Nuclear and Radiation Safety Research Section, Thailand Institute of Nuclear Technology, Thailand; 2 - National Energy Technology Center (ENTEC); 3 - National Science and Technology Development Agency (NSTDA), Thailand

Amin Inan, Md Shafqat OC - (26255) - COMBINING CONVENTIONAL AND INNOVATIVE RISK MODELLING TECHNIQUES TO IDENTIFY SAFETY CULTURE ISSUES DURING THE THREE MILE ISLAND NUCLEAR ACCIDENT

Amin Inan, Md Shafqat (Bangladesh)¹; Vatn, Jørn (Norway)¹; Lundteigen, Mary Ann (Norway)¹; Lee, Shenae (Norway)²

1 - Norwegian University of Science and Technology (NTNU); 2 - SINTEF Digital

Kowal, Karol OC - (26288) - INTEGRATING RAMI INTO RISK-INFORMED DECISION-MAKING FOR NUCLEAR FACILITIES

Kowal, Karol (Poland)¹

1 - National Centre for Nuclear Research (NCBJ)

Ordóñez Ródenas, José OC - (26291) - BEPU ANALYSIS OF AN EXTENDED SBO ACCIDENT IN A TYPICAL THREE-LOOP PWR

Ordóñez Ródenas, José (Spain)¹; Villanueva López, José Felipe (Spain)¹; Sánchez Galdón, Ana Isabel (Spain)²; Carlos Alberola, Sofía (Spain)¹; Martorell Alsina, Sebastián (Spain)¹; Mendizábal Sanz, Rafael (Spain)³

1 - Dept. of Chemical and Nuclear Engineering, Camino de Vera, s/n, 46022, Valencia (MEDASEGI, Universitat Politècnica de València); 2 - Dept. of Applied Statistics and Operations Research and Quality, Camino de Vera, s/n, 46022, Valencia (MEDASEGI, Universitat Politècnica de València); 3 - Consejo de Seguridad Nuclear, C/ Pedro Justo Dorado Dellmans, 11, 28040, Madrid

Sampath, Ram OC - (26342) - A FRAMEWORK FOR HANDLING SODIUM POOL FIRES FOR FIRE RISK ASSESSMENT IN SMALL MODULAR REACTORS

Sampath, Ram (United States of America)¹; Smith, Curtis (United States of America)²

1 - Centroid LAB; 2 - curtis@mit.edu

Park, Jinkyun OC - (26358) - HUMAN PERFORMANCE MEASURES FOR AN INTEGRATED SYSTEM VALIDATION - REPRESENTATIVE PROPERTIES WITH THEIR PRACTICAL DEFINITION

Park, Jinkyun (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Dos Santos Nicolau, Andressa (Guapimirim, RJ) OC - (26343) - A SYSTEMATIC REVIEW OF RELIABILITY AND SAFETY IN NUCLEAR POWER PLANTS

De Jesus Campos De Azevedo Julio, Carolina Victória (Brazil)¹; Dos Santos Nicolau, Andressa (Brazil)¹; Schirru, Roberto (Brazil)¹
1 - Program of Nuclear Engineering, COPPE, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

Session SS-13: Climate Change and Extreme Weather Events: Impacts on Critical Infrastructure Risk and Resilience **Meeting room 9 - Level -1**

Chairs

Maria Valentina Clavijo Mesa

Speaker

Bai, Hao SS - (26603) - HUMAN-CENTRIC RISK ASSESSMENT OF METRO SYSTEMS UNDER EXTREME RAINFALL

Bai, Hao (Portugal)^{1,2}; Zhang, Dongming (Portugal)²; Zio, Enrico (Portugal)¹

1 - Polytechnic of Milan, Italy; 2 - Tongji University, Shanghai, China

Lu, I-Kai SS - (27858) - CLIMATE CHANGE IMPACT ON RAILWAY TRACK BUCKLING: A PROBABILISTIC RISK ASSESSMENT FOR TAIWAN

Lu, I-Kai (Taiwan)¹; Lin, Chi-Ying (Taiwan)¹

1 - Department of Civil Engineering, National Yang Ming Chiao Tung University, Taiwan

Kongsvik, Trond SS - (29024) - IMPROVING SOCIETAL RESILIENCE THROUGH BOTTOM-UP APPROACHES AND CROSS SCALE INTERACTIONS – RESILIENT CITIZENSHIP AN INITIAL DISCUSSION

Herrera, Ivonne (Norway)¹; Haavik, Torgeir K (Norway)¹; Liste, Lucia (Norway)¹; Morten Schiefloe, Per (Norway)¹; Woods, David (United States of America)²; Rayo, Mike (United States of America)²; Kongsvik, Trond (Norway)³; M Ibrahim, Osman (Norway)^{4,6}; Fossen, Marita (Norway)⁷; Jonson, Carl-Oscar (Sweden)⁵

1 - Studio Apertura, NTNU Social Research AS, Norway; 2 - Department of Integrated Systems Engineering, Ohio State University, USA; 3 - Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Norway; 4 - City of Oslo, Norway; 5 - Department of Biomedical and Clinical Sciences, Linköping University, Sweden; 6 - University of Agder, Norway; 7 - Trondheim Red Cross, Norway

Taguado Menza, Santiago SS - (27715) - MULTI-CRITERIA OPTIMIZATION OF BUDGET ALLOCATION FOR RESILIENCE IMPROVEMENT OF INTERDEPENDENT CRITICAL INFRASTRUCTURES EXPOSED TO NATURAL HAZARDS

Taguado Menza, Santiago (Portugal)¹; Coscia, Thomas Matteo (Portugal)¹; Marchetti, Stefano (Portugal)¹

1 - Energy Department, Politecnico di Milano

SS-36: From Research to Implementation: Building Climate Resilience through Multi-Risk Engineering and Nature-Based Solutions. Insights from European research projects. The MED-IREN, NBSINFRA and MULTICLIMACT Experience **Meeting room 10 - Level -1**

Chairs

Monica Santamaria

Hélder S. Sousa

Speaker

Santamaria-Ariza, Monica SS - (27739) - A MULTI-SCALE RESILIENCE FRAMEWORK FOR CULTURAL HERITAGE PRESERVATION: APPLICATION TO THE RIGA CENTRAL MARKET

Santamaria-Ariza, Monica (Portugal)¹; Sharifzad, Hijratullah (Portugal)¹; S. Sousa, Hélder (Portugal)¹; Campos, José António Silva Carvalho Campos (Portugal)¹; Urciuoli, Luca (Portugal)²; Ingrosso, Ilaria (Portugal)³

1 - University of Minho, Portugal; 2 - KTH Royal Institute of Technology Sweden; 3 - Rina Consulting S.p.a., Lecce, Italy

Santamaria-Ariza, Monica SS - (28952) - DEVELOPING A RESILIENCE ASSESSMENT MATRIX FOR CULTURAL HERITAGE BUILDINGS

Huyen, Dang Thi (Portugal)¹; Matos, José C. (Portugal)¹; S. Sousa, Helder S. (Portugal)¹; Santamaria-Ariza, Monica (Portugal)¹; Urciuoli, Luca (Portugal)²

1 - ISISE, ARISE, Department of Civil Engineering, University of Minho, 4800-058 Guimarães, Portugal; 2 - KTH, Royal Institute of Technology, Lindstedsvägen 30, 114 28 Stockholm, Sweden

Varma, Aditya Kumar SS - (26491) - RISK ASSESSMENT OF CULTURAL HERITAGE BUILDINGS USING INSAR MONITORING

Rashdi, Rabia (Pakistan)¹; Cabanzo, Carlos (Colombia)¹; Matos, José António Silva Carvalho Campos (Portugal)¹; Varma, Aditya Kumar (India)²; Santamaria Ariza, Monica Patricia (Colombia)¹

1 - ISISE, ARISE, Department of Civil Engineering, University of Minho, Guimarães, Portugal; 2 - University of Minho, Guimarães, Portugal

Golemi, Alesia Margarita SS - (27902) - RESILIENCE-ENABLING INTERVENTIONS BASED ON BUILDING TYPOLOGY APPROACH FOR EARTHQUAKE APPLICATIONS

Golemi, Alesia Margarita (Portugal)¹; Karakitsou, Effrosini (Portugal)¹; Vlachogiannis, Diamanto (Portugal)¹; Sfetos, Athanasios (Portugal)¹; Barchetta, Lucia (Portugal)²; Rivarola, Marta (Portugal)³

1 - NCSR Demokritos; 2 - Camerino Municipality; 3 - Rina Consulting S.p.a., Italy

Zarghami, Amirmahdi SS - (29049) - A GIS-BASED SCENARIO-DRIVEN FRAMEWORK FOR MULTI-HAZARD FLOOD RISK ASSESSMENT: EVIDENCE FROM AVEIRO, PORTUGAL

Zarghami, Amirmahdi (Portugal)¹; Urbina Leal, Oscar Javier (Portugal)¹; S. Sousa, Hélder (Portugal)¹; Rodrigues Teixeira, Elisabete (Portugal)¹

1 - University of Minho, ISISE, ARISE, Department of Civil Engineering, Guimarães, Portugal

Sfetos, Athanasios (Agia Paraskevi) SS - (29154) - IMPLEMENTING DIGITAL TOOLS AND STAKEHOLDERS ENGAGEMENT IN ADDRESSING FLOOD PROTECTION TO CI. THE SITIA CASE STUDY

Sfetos, Athanasios (Greece)¹; Zarikos, Ioannis (Greece)¹; Vlachogiannis, Diamando (Greece)¹; Dimitropoulou, Panagiota (Greece)²; Kapetanakis, Pavlos Alexandros (Greece)³; Fylladaki, Kostantina (Greece)³

1 - Environmental Research Laboratory, Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, National Centre of Scientific Research Demokritos, Greece; 2 - Department of Psychology, University of Crete, Greece; 3 - Municipality of Sitia, Greece

15:30

16:00 **Coffee break** **Forum Braga Foyer - Level 0**

16:00

16:45 **Parallel Sessions**

Session: AA6 – Energy **Grand Auditorium - Level 0**

Chairs

Blazhe Gjorgiev

Speaker

Bassière, Alicia OC - (26528) - EXTREME WEATHER RISKS TO RENEWABLE POWER SYSTEMS: TAXONOMY OF PHYSICAL IMPACTS AND VULNERABILITIES

Bassière, Alicia (France)¹; Barros, Anne (France)¹; Abdin, Adam (France)¹

1 - LGI, CentraleSupélec

Qin, Ciyu (James) OC - (26546) - RISK-INFORMED VIRTUAL INERTIA SCHEDULING FOR RESILIENT POWER SYSTEMS

Qin, Ciyu (James) (Switzerland)¹; Abdollahi, Mehdi (Switzerland)¹; Xie, Renyou (Australia)¹; Gjorgiev, Blazhe (Switzerland)¹; Sansavini, Giovanni (Switzerland)¹

1 - ETH Zürich

Spada, Matteo OC - (26602) - HIERARCHICAL APPROXIMATE BAYESIAN COMPUTATION (H-ABC) FOR A COMPARATIVE RISK ASSESSMENT OF ONSHORE WIND IN EUROPE

Spada, Matteo (Switzerland)¹; Burgherr, Peter (Switzerland)²

1 - Institute of Sustainable Development (INE), School of Engineering (SoE), Zurich University of Applied Sciences (ZHAW), Winterthur, Switzerland; 2 - PSI Centers for Nuclear Engineering and Science and for Energy and Environmental Sciences, Laboratory for Energy Systems Analysis, Paul Scherrer Institute, Villigen PSI, Switzerland

Johnsen, Stig Ole OC - (27638) - CHALLENGES IN SAFETY MANAGEMENT WITHIN COMPLEX, SUBCONTRACTOR-DRIVEN ENVIRONMENTS: REFLECTIONS FROM EQUINOR'S INCIDENTS

Johnsen, Stig Ole (Norway)²; Steen, Riana (Norway)¹

1 - UiS, University of Stavanger, Norway; 2 - Department of Design, Norwegian University of Science and Technology, Norway

Akmali, Masood OC - (27680) - ADOPTION OF THE PHENOMENA IDENTIFICATION AND RANKING TABLE (PIRT) METHODOLOGY FOR SAFETY ASSESSMENT OF THE CHARTREUSE-P 1 GW STELLARATOR FUSION POWER PLANT

Akmali, Masood (France)¹

1 - Renaissance Fusion

Song, Jinwoo OC - (27749) - COMPONENTS DEGRADATION AND FAILURE INTERDEPENDENCE IN POWER ELECTRONICS CONVERTERS

Song, Jinwoo (Netherlands)¹; Fecarotti, Claudia (Netherlands)¹; Stathatos, Antonis (Netherlands)¹; Li, Chengmin (Netherlands)¹; Papafotiou, Georgios (Netherlands)¹

1 - Eindhoven University of Technology

Saure, Jane OC - (28990) - CRITICAL SUCCESS FACTORS FOR IMPLEMENTING OPERATIONAL LEADERSHIP CHANGE PROGRAMS IN HIGH-RISK INDUSTRIES: INSIGHTS FROM THE SUOL INITIATIVE

Von Hirsch, Helen (Norway)¹; Utvik, Ole Harald (Norway)²; Saure, Jane (Norway)³

1 - Helen von Hirsch; 2 - Ole Harald Utvik; 3 - Equinor

Tamburini, Federica OC - (26313) - RESILIENCE ASSESSMENT OF GREEN HYDROGEN PRODUCTION FACILITIES UNDER ESCALATION SCENARIOS

Tamburini, Federica (Italy)¹; Iaiani, Matteo (Italy)¹; Cozzani, Valerio (Italy)¹

1 - University of Bologna

Session: MA11 – Risk assessment **Small Auditorium - Level 1**

Chairs

Karol Kowal

Lucas Borges Leal Da Silva

Speaker

Jang, Seunghyun (Daejeon) OC - (26403) - ACCIDENT SCENARIO ANALYSIS FOR BEYOND-DESIGN BASIS EXTERNAL HAZARDS BASED ON THE PRA MODEL

Jang, Seunghyun (Korea, Republic of)¹; Kim, Min Kyu (Korea, Republic of)¹

1 - KOREA ATOMIC ENERGY RESEARCH INSTITUTE

Yin, Changzheng OC - (26413) - RISK ASSESSMENT, OPTIMIZATION AND SURROGATE MODELING FOR THE WATER LEVEL CONTROL SYSTEM

Yin, Changzheng (China)¹; Xie, Xiwen (China)¹; Peng, Changhong (China)¹

1 - University of Science and Technology of China

Johansson, Mikael OC - (26471) - LOST IN TRANSMISSION: DIGITAL DISTRACTION AND PEDESTRIAN SAFETY IN URBAN TRAM ENVIRONMENTS

Johansson, Mikael (Sweden)¹; Osvalder, Anna-Lisa (Sweden)²

1 - Populus Perspective; 2 - Chalmers University of Technology

Zhao, Yujia OC - (26495) - PHYSICS-BASED TWO-DIMENSIONAL HYDRODYNAMIC MODEL OF RIVERINE FLOOD DISASTERS ACROSS COSTAL CITIES

Sun, Li (United Kingdom)¹; Zhao, Yujia (United Kingdom)¹; Ahmadian, Reza (United Kingdom)¹

1 - School of Engineering, Cardiff University, Cardiff, CF24 3AA, United Kingdom

Session: MA9 – Prognostics and System Health Management **Congress Room 1 - Level 1**

Chairs

Mitra Fouladirad

Juseong Lee

Speaker

Lee, Juseong OC - (26339) - UNCERTAINTY-AWARE FAULT MODE DIAGNOSTICS FOR CONDITION-BASED MAINTENANCE OF BEARING

Lee, Juseong (Netherlands)¹; Fecarotti, Claudia (Netherlands)¹

1 - Eindhoven University of Technology

Das, Pankaz OC - (26345) - REMAINING USEFUL LIFE PREDICTION OF IMAGING DEVICES VIA MULTI-ITERATION SEMI-SUPERVISED MODELING AND REAL-WORLD EVALUATION

Das, Pankaz (United States of America)¹; Wang, Xi (United States of America)¹; Alpay, Bulent (United States of America)¹

1 - GE HealthCare

Das, Pankaz OC - (26346) - A STRUCTURED MACHINE LEARNING FRAMEWORK FOR PREDICTIVE MAINTENANCE IN MEDICAL IMAGING SYSTEMS

Das, Pankaz (United States of America)¹; Wang, Xi (United States of America)¹; Alpay, Bulent (United States of America)¹

1 - GE Healthcare

Bérengruer, Christophe OC - (26406) - MULTI-MODEL ENSEMBLE AND ITS PORTABILITY FOR THE PROGNOSTICS OF DIRECT METHANOL FUEL CELLS UNDER DIFFERENT OPERATING CONDITIONS

Zhang, Dacheng (China)¹; Dong, Jie (China)¹; Wang, Wei (China)²; Bérengruer, Christophe (France)³; Zhao, Zhengang (France)¹

1 - Kunming University of Science and Technology; 2 - City University of Hong Kong; 3 - Univ. Grenoble Alpes, CNRS, Grenoble INP, GIPSA-lab

Brito Schiele, Benjamin OC - (26432) - UNCERTAINTY MANAGEMENT IN PROGNOSTICS

Eleftheroglou, Nick (Netherlands)¹; Brito Schiele, Benjamin (Netherlands)¹

1 - iSP, TU Delft

Jain, Ashrith OC - (26453) - BUILT IN-PROGNOSTICS AND HEALTH MANAGEMENT (BI-PHM): NOVEL CONCEPT FOR PHM IMPLEMENTATION IN AVIATION.

De Jong, Arjan (Netherlands)^{1,2}; Jain, Ashrith (Netherlands)^{1,2}; A. Jimenez-Roa, Lisandro (Netherlands)^{1,2}

1 - ASAM, Netherlands Aerospace Centre, Netherlands; 2 - DPM, University of Twente, Netherlands

Cho, Seung Gyu OC - (26559) - CONCEPTUAL FRAMEWORK FOR DATA INTEGRITY ASSESSMENT FOR ARTIFICIAL INTELLIGENCE-BASED ABNORMAL EVENT DIAGNOSIS IN NUCLEAR POWER PLANTS

Cho, Seung Gyu (Korea, Republic of)¹; Lee, Seung Jun (Korea, Republic of)¹

1 - Ulsan National Institute of Science and Technology

Session: MA2 – Decision Making under Uncertainty **Congress Room 2 - Level 1**

Chairs

Rui Silva

Speaker

Karatzoudi, Konstantina OC - (26490) - A CONCEPTUAL FRAMEWORK FOR DEVELOPING A CLIMATE AND NATURAL RISK INDEX BASED ON ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORTING DATA

Karatzoudi, Konstantina (Norway)¹; Mrksic Kovacevic, Sanja (Norway)²

1 - Aker Solutions AS; 2 - Bane NOR

Battisti, Matteo OC - (26504) - DISTRIBUTIONALLY ROBUST BAYESIAN OPTIMIZATION FOR TWO-PHASE CONVERGENT-DIVERGENT NOZZLE SHAPE DESIGN

Cioffi, Andrea (Denmark)¹; Harbi, Ahmed (Italy)²; Agromayor, Roberto (Denmark)¹; Haglind, Fredrik (Denmark)¹; Persico, Giacomo (Italy)²; Barros, Anne (France)³; Fang, Yiping (France)³; Battisti, Matteo (France)³

1 - Department of Civil and Mechanical Engineering, Technical University of Denmark Koppels Allé, Building 404, 2800 Kgs. Lyngby, Denmark; 2 - Laboratory of Fluid Machines, Department of Energy, Politecnico di Milano, Via Lambruschini 4a, Milano 20156, Italy; 3 - Laboratoire Genie Industriel, CentraleSupélec, Université Paris Saclay, Gif-sur-Yvette 91190, France

Fritsch, Fabian OC - (26505) - A FRAMEWORK FOR MONITORING GROUP RESILIENCE TO ENHANCE DECISION-MAKING UNDER UNCERTAINTY

Fritsch, Fabian (Germany)¹; Straeter, Oliver (Germany)¹

1 - University of Kassel

Huseby, Arne OC - (26532) - PROJECT RISK MANAGEMENT USING DEEP REINFORCEMENT LEARNING

Huseby, Arne (Norway)¹; Falkeid, Martine (Norway)¹

1 - University of Oslo

Oikawa, Yoshiki OC - (26583) - VULNERABILITY OF EXISTING PROTECTION GALLERIES

Schellenberg, Kristian (Switzerland)¹; Oikawa, Yoshiki (Japan)²; Kagermanov, Alexander (Switzerland)¹;

Kurihashi, Yusuke (Japan)³

1 - Equi Bridges Ltd., Switzerland; 2 - Graduate School of Geosciences and Civil Engineering, Kanazawa University, Japan; 3 - Department of Geosciences and Civil Engineering, Kanazawa University, Japan

Gomez-Mogollon, Luz Adriana OC - (27733) - LINKING CLIMATE VARIATIONS WITH DESIGN PARAMETERS THROUGH DECISION SPACES: AN APPLICATION FOR AN URBAN DRAINAGE SYSTEM

Gomez-Mogollon, Luz Adriana (Italy)¹; Reder, Alfredo (Italy)¹; Napolitano, Lisa (Italy)¹; Rianna, Guido (Italy)¹

1 - CMCC Foundation - Euro-Mediterranean Center on Climate Change

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Nicolae Brînzei

John Andrews

Speaker

Zhu, Yuhang OC - (26108) - CONVEX OPTIMIZATION FRAMEWORK FOR PROBABILISTIC INVERSE PROBLEM IDENTIFICATION BASED ON THE PRINCIPLE OF PROBABILITY PRESERVATION

Zhu, Yuhang (China)¹; Li, Jie (China)²

1 - College of Civil Engineering, Tongji University, 1239 Siping Road, Yangpu District, Shanghai, 200092, China; 2 - State Key Laboratory of Disaster Reduction in Civil Engineering, Tongji University, 1239 Siping Road, Yangpu District, Shanghai, 200092, China

Morales-Nápoles, Oswaldo OC - (26138) - RECENT EXPERIENCE WITH THE USE OF CHIMERA FOR VINE COPULA MODELLING AND FUTURE CHALLENGES

Morales-Nápoles, Oswaldo (Netherlands)¹

1 - Delft University of Technology

Papadopoulos, Christos OC - (26148) - A REFINED APPROACH TO APPROXIMATING THE MEAN NUMBER OF SYSTEM REPAIRS

Papadopoulos, Christos (Greece)¹; Politis, Konstadinos (Greece)¹

1 - University of Piraeus

Riccardi, Luca OC - (26203) - BAYESIAN OPTIMAL EXPERIMENTAL DESIGN FOR PLANNING ACCELERATED LIFE TESTING CAMPAIGNS ON ELECTRONIC EQUIPMENT

Riccardi, Luca (Italy)^{3,4}; Bellani, Luca (Italy)¹; Compare, Michele (Italy)¹; Medici, Stefano (Italy)¹; Costa, A. (Italy)²; Maiorano, C. (Italy)²; Pascale, E. (Italy)²; Zio, Enrico (Italy)^{4,5}

1 - Aramix s.r.l, Milano; 2 - Hitachi Rail, Napoli, Italy.; 3 - Aramix s.r.l, Milano, Italy; 4 - Department of Energy and Nuclear Science and Technology, Politecnico di Milano; 5 - Mines-Paris, PSL University, CRC, Sophia Antipolis, France

Pradhan, Shrijal OC - (26219) - HYBRID SAFETY VERIFICATION FOR AUTONOMOUS VEHICLES: INTEGRATING CTL MODEL CHECKING WITH CONTINUOUS SAFETY SCORING

Pradhan, Shrijal (Germany)¹; Koerner, Andrew (Germany)¹; Bahn, Björn (Germany)¹

1 - Deutsches Zentrum für Luft- und Raumfahrt e.V.

Ochnio, Dawid OC - (26224) - INTERACTION EFFECTS IN SUBINTERVAL SENSITIVITY ANALYSIS

Ochnio, Dawid (United Kingdom)¹; De Angelis, Marco (United Kingdom)¹

1 - University of Strathclyde

Subedi, Abhishek OC - (26256) - AI EVOLUTION OF SOCIO-TECHNICAL SAFETY BARRIER ASSESSMENT

Subedi, Abhishek (Norway)¹; Flehmig, Niclas (Norway)¹; Yin, Shen (Norway)¹; Paltrinieri, Nicola (Norway)¹

1 - Norwegian University of Science and Technology

Gouda, Mennatallah OC - (27681) - AN EFFICIENT MULTIPLE-POINT ACTIVE KRIGING METHOD FOR RELIABILITY ASSESSMENT WITH COMPLEX FAILURE DOMAINS

Gouda, Mennatallah (France)¹; Battisti, Matteo (France)¹; Fang, Yiping (France)¹; Zeng, Zhiguo (France)¹; Barros, Anne (France)¹

1 - Chair on Risk and Resilience of Complex Systems, Laboratoire Genie Industriel, CentraleSupélec, Université Paris-Saclay, France

Session: MA4 – Human Factors and Human Reliability **Congress Room 4 - Level 1**

Chairs

Salvatore Massaiu*

Dusko Kancev

Speaker

Ding, Yaonan OC - (26367) - EFFECTS OF TRUST IN AUTOMATION AND TAKEOVER SYSTEM TYPE ON DRIVER TAKEOVER BEHAVIOR IN LEVEL 3 CONDITIONALLY AUTOMATED DRIVING: A HUMAN-IN-THE-LOOP DRIVING SIMULATION STUDY

Ding, Yaonan (China)¹; Zeng, Shengkui (China)¹; Guo, Jianbin (China)¹; Che, Haiyang (China)¹

1 - School of Reliability and Systems Engineering, Beihang University

Fernandes, Alexandra OC - (26501) - WHY COMPLIANCE IS NOT ENOUGH: EVALUATING AI SYSTEMS IN SAFETY-CRITICAL CONTEXT

Fernandes, Alexandra (Norway)¹; Ringstad, Arne Jarl (Norway)¹; Ludvigsen, Jan Tore (Norway)¹

1 - Equinor ASA

Khanna, Parul OC - (26521) - A LIFECYCLE-BASED FRAMEWORK FOR EMBEDDING TRUSTWORTHINESS IN MAINTENANCE PLANNING DECISION-SUPPORT SYSTEMS

Khanna, Parul (Sweden)¹; Karim, Ramin (Sweden)¹

1 - Luleå University of Technology, Sweden

Gjertsen, Anders Brune OC - (26527) - ESPOUSED STRATEGY VERSUS THEORY IN USE IN YOUNG A1 RIDERS: VIDEO AND EYE TRACKING EVIDENCE OF LEARNING GAPS

Gjertsen, Anders Brune (Norway)¹; Wigum, Jan Petter (Norway)¹; Bogfjellmo, Petter Helmersen (Norway)¹; Bromstad, Simon Minsaas (Norway)¹; Gela, Zymer (Norway)¹

1 - Nord University, Norway

Arigi, Awwal OC - (26592) - EXPERT PERSPECTIVES ON HUMAN RELIABILITY ANALYSIS FOR ADVANCED REACTORS

Arigi, Awwal (Norway)¹

1 - Institute for Energy Technology

Santiago Figueiroa Filho, Celso OC - (27665) - HUMAN ERROR RECOVERY MODELING USING FAULT TREE ANALYSIS (FTA): CASE STUDIES IN THE STEEL INDUSTRY

Santiago Figueiroa Filho, Celso Luiz (Brazil)¹; Fonseca Junior, Laudelino (Brazil)²; Paneto Grassi, Luiza (Brazil)²; Bergsten, Ivan Eric (Brazil)³; Santiago Figueiroa Filho, Celso (Brazil)¹

1 - G-RAMS Inovation; 2 - Arcelor-Mittal; 3 - Universidade Federal da Bahia

Carvalho, Alessandra Lopes OC - (27718) - HUMAN ERROR PREDICTION WITH RELIABILITY LIFE DATA ANALYSIS COMPARED TO CLASSICAL HUMAN RELIABILITY ASSESSMENT : A CASE STUDY IN FREIGHT TRAIN RAILWAYS

Carvalho, Alessandra Lopes (Brazil)¹; Figueirôa Filho, Celso Luiz Santiago (Brazil)²; Silva, Joselma Ramos (Brazil)¹; Rocha, Gabriela Ferreira Baroni (Brazil)¹

1 - Pontifical Catholic University of Minas Gerais; 2 - GRAMS- Inovation, Reliability Research

Meyer, Jonas; Mastour, Mariam; Koester, Thomas (Brøndby) OC - (27732) - A PRACTICAL VIEW ON INTEGRATION OF RISK MANAGEMENT AND HUMAN FACTORS

Meyer, Jonas (Denmark)¹; Mastour, Mariam (Denmark)¹; Koester, Thomas (Denmark)¹; L. Jensen, Jesper (Denmark)¹

1 - Risk Management & Human Factors, FORCE Technology, Denmark

Session: AA11 – Maritime and Offshore Technology **Congress Room 5 - Level 1**

Chairs

Sean Loughney

Zaili Yang

Speaker

Wang, Shuai OC - (27643) - TRUST ACROSS BOUNDARIES: BLOCKCHAIN-BASED DATA INTEGRITY VERIFICATION FOR RELIABLE VESSEL PERFORMANCE ASSESSMENT

Wang, Shuai (Norway)¹; Karandikar, Nikita (Norway)¹; Knutsen, Knut Erik (Norway)¹

1 - Group Research and Development, DNV AS

Khodam, Ali OC - (27743) - STRUCTURAL RELIABILITY ASSESSMENT OF DETERIORATING OFFSHORE WIND TURBINE MONOPILES FOR EXTREME LIMIT STATES

Khodam, Ali (Denmark)¹; Nielsen, Jannie Sønderkær (Denmark)¹

1 - Aalborg University

Kim, Hyungju OC - (27842) - QUANTITATIVE RISK ANALYSIS OF AMMONIA FUELLED SHIP

Go, Woojin (Korea, Republic of)²; Kim, Hyungju (Norway)¹; Kim, Dongyoung (Korea, Republic of)²; Kim, Minjoo (Korea, Republic of)²; Kwak, Hyunjun (Korea, Republic of)²; Kim, Minseong (Korea, Republic of)²; Ahn, Yeongjong (Korea, Republic of)²; Lee, Changwoo (Korea, Republic of)²

1 - Norwegian University of Science and Technology (NTNU); 2 - HD Korea Shipbuilding & Offshore Engineering Co., Ltd (HD KSOE)

Khorasani, Mahsa OC - (30346) - BRIDGING MARITIME ACCIDENT CAUSATION AND SUSTAINABILITY THROUGH LARGE LANGUAGE MODELS

Khorasani, Mahsa (Finland)¹; Bahoo, Ahmad (Finland)¹; Musharraf, Mashrura (Finland)¹

1 - Marine and Arctic Technology, Department of Energy and Mechanical Engineering, Aalto University, Espoo, Finland

Martha De Souza, Gilberto Francisco OC - (26488) - RELIABILITY-BASED ASSESSMENT OF OPERATIONAL MODES FOR DYNAMIC POSITIONING SYSTEMS OF DRILLING VESSELS

Martha De Souza, Gilberto Francisco (Brazil)¹; Silva, Alecio Julio (Brazil)¹; Veruz, Edilson Gabriel (Brazil)¹; De Moura Filho, José Ricardo Brígido (Brazil)²; Rosa, Douglas José (Brazil)³; Tannuri, Eduardo Aoun (Brazil)¹

1 - Escola Politécnica - University of São Paulo; 2 - Leopoldo Américo Miguez de Mello Research and Development Center - Petrobras; 3 - 3Constellation Oil Services

INTRODUCTION TO MEDICAL DEVICE SAFETY RISK MANAGEMENT (ISO 14971) Part II **Meeting room 6 - Level -1**

Session: AA10 – Manufacturing **Meeting room 7 - Level -1**

Chairs

Marcin Hinz

Sylwia Werbinska-Wojciechowska

Speaker

Morozov, Andrey OC - (26109) - INTEGRATING RISK INTO SKILL-BASED MANUFACTURING: A MODULAR PLATFORM FOR MULTI-OBJECTIVE OPTIMIZATION

Hoßfeld, Max (Germany)¹; Fischer, Patrick (Germany)²; Uhl, Alexander (Germany)²; Wortmann, Andreas (Germany)²; Morozov, Andrey (Germany)²

1 - InnovationCampus Future Mobility (ICM); 2 - University of Stuttgart

Cassidy, Maria OC - (26227) - AN INDUSTRY SCALE DIGITAL-TWIN FOR MACHINE FAULT DIAGNOSIS AND PROGNOSTICS

Brown, Blair (United Kingdom)¹; Stephen, Bruce (United Kingdom)¹; Cassidy, Maria (United Kingdom)¹; Gibson, Matthew (United Kingdom)²; Taylor, Kane (United Kingdom)²

1 - The University of Strathclyde; 2 - Ailsa Reliability Solutions Ltd

Schepers, David OC - (26231) - INFLUENCE OF BRAKE SHOCKS ON SAFETY COMPONENTS OF ELECTRIC MOTORS

Napp, Sarah (Germany)¹; Schepers, David (Germany)¹

1 - University of Applied Sciences Ruhr West

Bubert, Benedikt OC - (26334) - SEMI-SUPERVISED LEARNING WITH CONVOLUTIONAL NEURAL NETWORKS FOR SURFACE ROUGHNESS CLASSIFICATION

Bubert, Benedikt (Germany)¹; Hinz, Marcin (Germany)¹

1 - Munich University of Applied Sciences

Stewart-Green, Connor OC - (26420) - CBM POLICY OPTIMIZATION BASED ON LÉVY COPULA MODELING OF LATENT DEGRADATION

Stewart-Green, Connor (Australia)¹; Shemehsavar, Soudabeh (Australia)¹; Hocking, Graeme (Australia)¹

1 - Murdoch University

Efinger, Dshamil OC - (26568) - COMBINING RELIABILITY ENGINEERING WITH SUSTAINABILITY ASSESSMENT – A COMPARISON OF THE DESIGN OF AM AND CNC-MANUFACTURED COMPONENTS ILLUSTRATES THE POTENTIAL

Efinger, Dshamil (Germany)¹; Prescher, Tim (Germany)²; Albrecht, Stefan (Germany)³; Dazer, Martin (Germany)¹

1 - Institute of Machine Components (IMA), University of Stuttgart; 2 - Institute of Acoustics and Building Physics, University of Stuttgart; 3 - Fraunhofer Institute for Building Physics IBP

Session: AA13 – Nuclear Industry **Meeting room 8 - Level -1**

Chairs

Claudia Picoco

Francesco Di Maio

Speaker

Dos Santos Nicolau, Andressa OC - (26405) - TEST INTERVALS, COST AND RISK OPTIMIZATION IN NUCLEAR REACTOR SAFETY SYSTEMS USING CUCKOO SEARCH METAHEURISTIC

Araujo Silva Marques, Vinicius (Brazil)¹; Dos Santos Nicolau, Andressa (Brazil)¹; Schirru, Roberto (Brazil)¹

1 - Universidade Federal do Rio de Janeiro

Kang, Sanghee OC - (26483) - PRELIMINARY STUDY ON THE DEVELOPMENT OF RISK-INFORMED AND PERFORMANCE-BASED (RIPB) OPERATING TECHNICAL GUIDELINES FOR I-SMR

Kang, Sanghee (Korea, Republic of)¹; Lee, Sungjin (Korea, Republic of)¹

1 - Korea Hydro & Nuclear Power (KHNP), Central Research Institute

Dirksen, Gerben OC - (26550) - DEVELOPMENT OF A FULL SCOPE EXTERNAL HAZARD PSA FOR GÖSGEN NPP

Dirksen, Gerben (Germany)¹; Kancev, Dusko (Switzerland)²; Shevchenko, Artem (Germany)¹; Pellissetti, Manuel (Germany)¹

1 - Framatome GmbH; 2 - Kernkraftwerk Gösgen-Däniken

Kaarstad, Magnhild OC - (26554) - IMPACT OF CREW BRIEFS ON CREW DYNAMICS IN NUCLEAR POWER PLANT OPERATIONS

Kaarstad, Magnhild (Norway)¹; Mcdonald, Rob (Norway)¹; Odèen, Daniel (Norway)¹

1 - IFE

Sarshar, Sizarta OC - (27837) - USING STRUCTURED SAFETY ARGUMENT TECHNIQUES TO PLAN SAFETY-CRITICAL OPERATIONS

Sarshar, Sizarta (Norway)¹; Winther, Rune (Norway)¹

1 - IFE

SS-36: From Research to Implementation: Building Climate Resilience through Multi-Risk Engineering and Nature-Based Solutions. Insights from European research projects. The MED-IREN, NBSINFRA and MULTICLIMACT Experience [Meeting room 10 - Level -1](#)

Chairs

Monica Santamaria

Hélder S. Sousa

Speaker

Castaner, Lauren SS - (29063) - NBS SITE-SPECIFIC SUITABILITY AND ACCEPTANCE ASSESSMENT FOR CRITICAL INFRASTRUCTURE PROTECTION

Castaner, Lauren (Spain)¹; Wirth, Maria (Austria)¹; Bertino, Gaetano (Italy)¹; Strauss, Alfred (Austria)²; Fernandes, Sergio (Portugal)³; Gjorgjiev, Igor (Macedonia)⁴; Petreski, Borjan (Macedonia)⁴

1 - alchemia-nova research & innovation gemeinnützige gmbh; 2 - BOKU University; 3 - Institute for Sustainability and Innovation in Structural Engineering, University of Minho, Guimarães, Portugal; 4 - IZIIS

17:30

19:00 **ESRA Assembly** [Small Auditorium - Level 1](#)



terça-feira, 16 junho 2026

08:30

19:00 **Registration** Forum Braga Foyer - Level 0

09:00

10:30 **Round table 1 (technological risks): How do we balance risks on a rapid tech growth?** Grand Auditorium - Level 0

Chairs

Shirley Dyke

Speaker

Raphael Moura

Daniel Straub

Shirley Dyke

Fabrizio Colalongo

10:30

11:00 **Coffee break** Forum Braga Foyer - Level 0

11:00

12:30 **Parallel Sessions**

Session: MA11 – Risk assessment Grand Auditorium - Level 0

Chairs

Christophe Berenguer

Sean Loughney

Speaker

Sartore, Federico OC - (26519) - A PROBABILISTIC RISK ASSESSMENT METHOD FOR POWER TRANSMISSION ASSET FAILURE ANALYSES

Sartore, Federico (Switzerland)¹; Gjorgiev, Blazhe (Switzerland)¹; Sansavini, Giovanni (Switzerland)¹
1 - ETH Zurich

Yaich, Reda OC - (26537) - A CO-ANALYSIS FRAMEWORK FOR SAFETY AND CYBERSECURITY ASSESSMENT IN AUTONOMOUS MARITIME OPERATIONS

Louzis, Konstantinos (Greece)¹; Siokouros, Panayiotis (Greece)¹; Danopoulou, Anastasia (Greece)¹; Yaich, Reda (France)²

1 - National Technical University of Athens, Greece; 2 - IRT SystemX, French Institute of Technology, France

Silva Carvalho Campos Matos, Jose Antonio OC - (27653) - DEVELOPMENT OF A RISK ASSESSMENT PLATFORM FOR LIFELINE NETWORKS

Esmailzadeh Hakimi, Babak (Iran)¹; Silva Carvalho Campos Matos, Jose Antonio (Portugal)²
1 - IIEES- Phd candidate; 2 - University of Minho, Department of Civil Engineering

Ding, Long OC - (27802) - VULNERABILITY ASSESSMENT OF STORAGE TANKS UNDER FIRE EXPOSURE CONSIDERING TWO-FOLD UNCERTAINTIES BASED ON CREDIBILITY THEORY <u>Ding, Long</u> (China)¹; Cui, Qianqian (China)¹; Ji, Jie (China)¹ 1 - University of Science and Technology of China
Mascheri, Glenda OC - (26076) - VULNERABILITY AND CASUALTY OF AN EXISTING URBAN COMPOUND IN LISBON <u>Mascheri, Glenda</u> (Portugal)¹; Chieffo, Nicola (United Kingdom)²; Pinto, Cláudia (Portugal)³; Vaiano, Generoso (Italy)⁴; B. Lourenço, Paulo (Portugal)¹; Fabbrocino, Francesco (Italy)⁴ 1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - University of Huddersfield, School of Computing and Engineering, Department of Engineering, Queensgate HD1 3DH, Huddersfield, United Kingdom; 3 - Câmara Municipal de Lisboa, Lisboa, Portugal; 4 - Pegaso Telematic University, Department of Engineering, Naples, Italy
Na, Janghwan OC - (24061) - A STUDY ON THE INNOVATIVE SMR TECHNOLOGY DEVELOPMENT FOCUSED ON PROBABILISTIC RISK ASSESSMENT & METHODOLOGY Moon, Horim (Korea, Republic of)¹; <u>Na, Janghwan</u> (Korea, Republic of)¹ 1 - innovative SMR Development Agency
Pereira, Jose Cristiano OC - (27874) - ADAPTED FMEA FRAMEWORK FOR CUBESAT RISK ASSESSMENT: A SYSTEMATIC APPROACH FOR MINIATURIZED SPACE SYSTEMS Pereira, Celso (Brazil)¹; Gonçalves, Heitor (Brazil)¹; Esteves, Cleber (Brazil)¹; Amaral, Renato (Brazil)¹; <u>Pereira, Jose Cristiano</u> (Brazil)¹ 1 - Catholic University of Petropolis-UCP

Norisk Workshop **Small Auditorium - Level 1**

11:00

11:30 Welcome and workshop introduction

11:30

12:30 Associated partners presentations

Speaker

An overview of climate change impacts on critical infrastructures and NBS as adaptation multipliers: the Med-IREN project - Athanasios Sfetsos (Agia Paraskevi)

Advancing Climate Risk Assessment for Resilient Urban Systems: Methods and Applications from CMCC - Carmela Aprea

Application of probabilistic methods in civil engineering - Marcin Koniorczyk

Digital Technologies and Structural Health Monitoring for Smart Infrastructure Management - Francesca Marsili

A Digital Twin Framework for Climate Resilience of Critical Infrastructures in Mediterranean Regions - Nnamani Nneka

Chairs

Mitra Fouladirad

Theresa Stewart

Speaker

Stewart, Theresa OC - (27760) - A GENERALIZED PROGNOSIS AND HEALTH MONITORING PLATFORM FOR NETWORK-BASED SYSTEMS USING HYBRID CAUSAL LOGIC MODELING APPROACH
Chalgham, Wadie (United States of America)¹; Zhu, Dongfeng (United States of America)²; Mosleh, Ali (United States of America)²; Stewart, Theresa (United States of America)¹
1 - University of California, Los Angeles (UCLA); 2 - The UCLA B. John Garrick Institute for the Risk Sciences, University of California, Los Angeles (UCLA), USA

De Souza, Gilberto Francisco Martha OC - (26195) - THE ROLE OF RELIABILITY KNOWLEDGE IN UNSUPERVISED FAULT DETECTION OF WIND TURBINES
Ricardo, Renan Lopes (Brazil)¹; Nogueira, Welker Facchini (Brazil)¹; Michalski, Miguel Angelo De Carvalho (Brazil)¹; De Souza, Gilberto Francisco Martha (Brazil)¹
1 - Department of Mechatronics and Mechanical Systems Engineering, Polytechnic School, University of São Paulo, Avenida Professor Mello de Moraes 2231, São Paulo 05508-030, SP, Brazil

Bahoo, Ahmad OC - (27845) - A TEMPORAL CONVOLUTIONAL NETWORK (TCN) APPROACH FOR ANOMALY DETECTION IN COMPLEX LABELLED OPERATIONAL DATA
Bahoo, Ahmad (Finland)⁴; Bondarenko, Oleksiy (Japan)¹; Abaei, Mohammad Mahdi (Finland)⁴; Leoni, Leonardo (Italy)²; De Carlo, Filippo (Italy)³
1 - National Maritime Research Institute, Tokyo, Japan; 2 - Department of Theoretical and Applied Sciences, eCampus University, Novedrate (CO), Italy; 3 - Department of Industrial Engineering, University of Florence, Florence, Italy; 4 - Marine and Arctic Technology Group, Department of Energy and Mechanical Engineering, Aalto University, Finland

Theiler, Raffael OC - (29034) - A GENERAL AND TRANSFERABLE FRAMEWORK FOR PROGNOSTICS AND HEALTH MANAGEMENT USING TABULAR FOUNDATION MODELS
Theiler, Raffael (Switzerland)¹; Telyatnikov, Lev (Switzerland)¹; Fink, Olga (Switzerland)¹
1 - EPFL

Salinas-Camus, Mariana OC - (27679) - PROBABILISTIC SYSTEM-LEVEL PROGNOSTICS FOR RELIABILITY AND RISK ASSESSMENT
Salinas-Camus, Mariana (Netherlands)¹; Carpentier, Oscar (Netherlands)¹; Eleftheroglou, Nick (Netherlands)¹
1 - Delft University of Technology

Bracke, Stefan OC - (26117) - A FRAMEWORK FOR ASSESSING THE SECOND-LIFE POTENTIAL OF LITHIUM-ION BATTERIES USING TOMOGRAPHIC AND ELECTROCHEMICAL PARAMETERS
Pietruschka, Jannis (Germany)¹; Golimbek, Leon (Germany)¹; Müller, Hans-Werner (Germany)²;

Günnewig, Olaf (Germany)³; Bracke, Stefan (Germany)¹
1 - University of Wuppertal; 2 - elorec Recycling; 3 - diondo GmbH

Session: MA2 – Decision Making under Uncertainty **Congress Room 2 - Level 1**

Chairs

Thomas Termin

Speaker

Koo, Kwi Yeon OC - (27805) - DYNAMIC RISK ASSESSMENT FOR RESILIENT PORT OPERATIONS UNDER INCREASING EXTREME WEATHER CONDITIONS

Koo, Kwi Yeon (Norway)¹; Chikelu, Gabriel (Finland)²; Hasslan, Synnøve Sunne (Norway)¹; Haavardtun, Per (Norway)¹; Steger-Jensen, Kenn (Norway)¹
1 - University of South-Eastern Norway; 2 - Aalto University

Zweet, Rowena OC - (27808) - THE CONSTRUCTION OF RISK IN POLICY PROCESSES

Zweet, Rowena (Netherlands)¹; Stevenson, Lars (Netherlands)¹
1 - Radboud University

Kruke, Bjørn Ivar OC - (27809) - NORWEGIAN POLICE OFFICERS RISK PERCEPTION IN ARMED CONFRONTATIONS

Kruke, Bjørn Ivar (Norway)²; Henriksen, Steinar Vee (Norway)¹; Bardal, Bjørn (Norway)¹
1 - Norwegian Police University College; 2 - University of Stavanger

Dinis, Duarte OC - (27822) - A DECISION SUPPORT SYSTEM FOR MAINTENANCE TROUBLESHOOTING: DEVELOPMENT AND APPLICATION IN AN AVIATION MRO CONTEXT

Justino, Alone (Portugal)¹; Dinis, Duarte (Portugal)^{1,2,3}
1 - Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade NOVA de Lisboa, 2829-516 Caparica, Portugal; 2 - UNIDEMI, Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade NOVA de Lisboa, 2829-516 Caparica, Portugal; 3 - CEGIST, Instituto Superior Técnico, Universidade de Lisboa, Av. Rovisco Pais, 1049-001 Lisboa, Portugal

Straub, Daniel OC - (28970) - BAYESIAN OPTIMIZATION FOR IDENTIFYING OPTIMAL RISK REDUCTION STRATEGIES UNDER HIGH UNCERTAINTIES

Ruf, Mara (Germany)¹; Straub, Daniel (Germany)¹
1 - Technical University Munich

Divers, Jack OC - (29045) - MULTI-CRITERIA SAFETY AND PERFORMANCE ASSESSMENT OF ALTERNATIVE MARINE FUELS FOR MARINE APPLICATIONS

Divers, Jack (United Kingdom)¹; Loughney, Sean (United Kingdom)¹; Blanco-Davis, Eddie (United Kingdom)¹; Malkeson, Sean (United Kingdom)¹
1 - Liverpool John Moores University

Chairs

Rasa Remenyte-Prescott

Christian Tanguy

Speaker

Raihana, Kazi Kowhsin OC - (26281) - RELIABLE PERCEPTION UNDER VEILING GLARE: SYNTHETIC GLARE GENERATION AND REALISM VALIDATION FOR AUTOMATED VEHICLES
Raihana, Kazi Kowhsin (Germany)¹; Pradhan, Shrijal (Germany)¹; Castelino, Redge Melroy (Germany)¹; Lamm, Arne (Germany)¹
 1 - German Aerospace Center (DLR e.V.)

Rothemann, Karina OC - (26282) - REVIEW OF CLASSICAL SAFETY ANALYSIS EVOLUTION UNDER ISO 26262 & ISO/PAS 21448 FOR AUTOMATED DRIVING
 Hahn, Axel (Germany)¹; Rothemann, Karina (Germany)¹; Lamm, Arne (Germany)¹
 1 - German Aerospace Center (DLR)

Mathavan, Thirusankaranand OC - (26304) - A CFD-BASED SURROGATE MODEL FOR QUANTIFYING HYDRODYNAMIC FORCES ON COASTAL STRUCTURES UNDER UNCERTAIN COMPOUND FLOODING SCENARIOS
Mathavan, Thirusankaranand (France)¹; Bastidas-Arteaga, Emilio (France)¹; Liberge, Erwan (France)¹
 1 - La Rochelle Université

Günther, Alexander OC - (26306) - SINGLE-VALUED RISK BOUND FOR NORMAL CLASSIFIERS
Günther, Alexander (Germany)¹; Liggesmeyer, Peter (Germany)^{1,2}
 1 - University of Kaiserslautern-Landau; 2 - Franhofer Institute for Experimental Software Engineering (IESE)

Mell, Philipp OC - (26317) - ALGORITHMIC GENERATION OF EMPIRICAL LIFE-STRESS MODELS WITH STATISTICAL METHODS
Mell, Philipp (Germany)¹; Dazer, Martin (Germany)¹
 1 - University of Stuttgart

Hilmi, Muhammad OC - (26335) - ONLINE MODEL DISCOVERY UNDER PARAMETER UNCERTAINTY FOR RISK AND RELIABILITY-BASED DECISION SUPPORT
Hilmi, Muhammad (Norway)¹; Vatn, Jørn (Norway)¹; Hasan, Agus (Norway)¹; Lundteigen, Mary Ann (Norway)¹
 1 - Norwegian University of Science and Technology

Hachem, Hassan OC - (26379) - TRANSFORMED VARIANCE GAMMA PROCESS FOR DEGRADATION DYNAMICS

Hachem, Hassan (Qatar)¹; Soukarieh, Inass (France)²; Fouladirad, Mitra (France)³

1 - College of Science and Engineering, Hamad Bin Khalifa University; 2 - Statera Biometry, Neuilly-Sur-Seine; 3 - Aix Marseille Univ, CNRS, Centrale Med, M2P2

Session: MA4 – Human Factors and Human Reliability **Congress Room 4 - Level 1**

Chairs

Luca Podofillini

Maria Chiara Leva

Speaker

Leva, Maria Chiara OC - (27744) - DEVELOPING A OHS SOCIO-TECHNICAL SIMULATION ENVIRONMENT FOR MANUFACTURING WORKFORCE EDUCATION

Tahir, Muhammad Bilal (Finland)¹; Kauppila, Osmo (Finland)¹; Reiman, Arto (Finland)¹; William, Nobel John (Ireland)²; Fernandes Ramos, Ines Filipa (Ireland)²; Leva, Maria Chiara (Ireland)²; Bujanja, Milica (Serbia)³; Djapan, Marko (Serbia)³; Djordjevic, Aleksandar (Serbia)³

1 - University of Oulu; 2 - Technological University Dublin; 3 - University of Kragujevac

Immonen, Essi OC - (27747) - COMPARING IDENTIFICATION OF HUMAN FAILURE EVENTS WITH TWO HRA METHODS IN AN EX-CONTROL ROOM ACTION

Karanta, Ilkka (Finland)¹; Immonen, Essi (Finland)¹

1 - VTT

Souza Bispo, Leandro OC - (27776) - PSYCHOSOCIAL FACTORS CONTRIBUTING TO ACCIDENTS IN BRAZILIAN AVIATION

Souza Bispo, Leandro (Brazil)¹; Pinto Gonçalves Filho, Anastácio (Brazil)¹; Gaudêncio Mendonça Freires, Francisco (Brazil)¹

1 - UFBA - Federal University of Bahia

Massaiu, Salvatore OC - (27839) - AUTONOMOUS SYSTEMS AND THE EROSION OF ADAPTATION: CHALLENGES FOR HUMAN-AI COLLABORATION

Massaiu, Salvatore (Norway)¹

1 - IFE

Mascherona, Roberto OC - (27875) - ADAPTING HUMAN RELIABILITY ANALYSIS TO AUTONOMOUS CONTROL FOR SMALL MODULAR REACTORS

Mascherona, Roberto (France)¹; Artioli, Martina (France)¹; Jourdain, Alexis (France)¹

1 - Mott MacDonald

Arevalos, Ana Pamela OC - (29055) - HUMAN RELIABILITY IN FOOD SAFETY: A SYSTEMATIC REVIEW OF KAP INTERVENTIONS
 Insfran-Rivarola, Andrea (Paraguay)¹; Arevalos, Ana Pamela (Paraguay)²; Maehara, Airi (Paraguay)³; Vazquez Noguera, Jose Luis (Paraguay)¹; Grillo, Sebastian (Paraguay)⁴; Gonzalez-Cespedes, Laura (Paraguay)⁵; Pérez-Estigarribia, Pastor Enmanuel (Paraguay)³; Sanabria-Villamayor, Ulises (Paraguay)¹; Velazquez, Yamila (Paraguay)¹
 1 - Universidad Americana; 2 - Department of Industrial Engineering, Facultad de Ingeniería, Universidad Nacional de Asunción; 3 - Facultad Politécnica, Universidad Nacional de Asunción; 4 - Universidad Autónoma de Asunción; 5 - Departamento de Nutrición, Dirección de Investigación, Facultad de Ciencias Químicas, Universidad Nacional de Asunción

Zhang, Zimu OC - (29058) - BENCHMARKING STATE-OF-THE-ART LARGE LANGUAGE MODELS FOR AUTOMATED HUMAN RELIABILITY DATA COLLECTION AND SUMMARIZATION
Zhang, Zimu (United Kingdom)¹; Patelli, Edoardo (United Kingdom)¹
 1 - Edoardo Patelli

La Monica, Antonino OC - (27778) - COGNITIVE ERGONOMICS IN HUMAN-ROBOT COLLABORATION: A SYSTEMATIC LITERATURE REVIEW OF APPLICATIONS IN INDUSTRIAL SETTINGS
La Monica, Antonino (Italy)¹; Vitrano, Gaia (Italy)¹; Micheli, Guido Jacopo Luca (Italy)¹; Neri, Alessandra (Italy)¹; Calabrese, Antonio (Italy)¹
 1 - Department of Management, Economics and Industrial Engineering, Politecnico di Milano, Milan, Italy

SS-01: Advancements in Risk Assessment in Aviation and Space System **Congress Room 5 - Level 1**

Chairs

Mario P Brito

Moacyr Cardoso Jr

Speaker

Brito, Mario SS - (26480) - MODELLING THE HIDDEN PATHWAYS OF RISK: A CAUSAL APPROACH TO PREDICTING BIOHAZARD INCIDENTS IN AIR CARGO OPERATIONS
Brito, Mario (Portugal)¹; Bukhman, Stanislav (Portugal)¹
 1 - Centre for Risk Research, University of Southampton, United Kingdom

Brito, Mario SS - (26487) - MULTI-PHASE RISK PROPAGATION IN REUSABLE LAUNCH SYSTEMS: INTEGRATING MONITORING AND SYSTEM DYNAMICS FOR ADAPTIVE SAFETY ANALYSIS
Brito, Mario (Portugal)¹; Zhang, Hanqin (Portugal)¹
 1 - Centre for Risk Research, University of Southampton, United Kingdom

Brito, Mario SS - (27916) - PROBABILISTIC RISK ASSESSMENT OF AUTONOMOUS DRONE SWARMS FOR DISASTER RESPONSE: INSIGHTS FROM EXPERT JUDGMENT WITH 120 YEARS OF COMBINED EXPERIENCE
Brito, Mario (Portugal)¹

1 - Centre for Risk Research, University of Southampton, United Kingdom

Castro Fernandes, Daniella SS - (26124) - ADVANCING CASCADING EFFECTS ANALYSIS IN AVIATION: A SYSTEMATIC LITERATURE REVIEW

Castro Fernandes, Daniella (Portugal)¹; Machado Cardoso-Junior, Moacyr (Portugal)¹

1 - Aeronautics Institute of Technology, Brazil

Castro Fernandes, Daniella SS - (26123) - RISK ASSESSMENT OF EVTOL OPERATIONS IN URBAN ENVIRONMENTS: A FRAM APPROACH

Castro Fernandes, Daniella (Portugal)¹; Fowler, João Guilherme (Portugal)¹; Machado Cardoso-Junior, Moacyr (Portugal)¹

1 - Aeronautics Institute of Technology, Brazil

Reiser, Christianne SS - (26098) - ENHANCING AVIATION SAFETY ANALYSIS THROUGH FRAM-FDM: A DATA-DRIVEN APPROACH TO PERFORMANCE VARIABILITY

Reiser, Christianne (Portugal)¹; Villani, Emilia (Portugal)²; Machado Cardoso-Junior, Moacyr (Portugal)²

1 - Embraer; 2 - Aeronautics Institute of Technology, Brazil

Machado Cardoso Junior, Moacyr SS - (26157) - WHO SHOULD SIT AT THE EXIT ROW? A HUMAN FACTORS PERSPECTIVE

Correa Dos Reis, Ariane (Brazil)¹; Russo De Freitas Lessa, Carla (Brazil)¹; Burth Kurka, Peter (Brazil)¹; Freire Dos Santos Alencar, Rodrigo (Brazil)¹; Kawani Leandro Strohm, Ingrid (Brazil)¹; Machado Cardoso Junior, Moacyr (Brazil)¹

1 - Centro de Tecnologia e Empreendedorismo (CTE), Instituto Tecnológico de Aeronáutica (ITA)

Session: AA15 – Security **Meeting room 6 - Level -1**

Chairs

Sissel Haugdal Jore

Speaker

Solli, Bjørn-Erik OC - (24053) - RISK BEYOND DOCTRINE II – AN EMPIRICAL STUDY OF NATO'S RISK MANAGEMENT INTEGRATION IN DECISION - MAKING

Solli, Bjørn-Erik (Norway)¹; Borrie, Andy (United Kingdom)²

1 - North Atlantic Treaty Organization & Supreme Allied Commander Transformation's Professional Doctorate Program, Norway; 2 - Made to Measure Mentoring Limited & Gloucestershire University, England

Shukla, Ankur OC - (26560) - AI APPLICABILITY AND CYBERSECURITY CHALLENGES IN SAFETY-CRITICAL IT/OT ENVIRONMENTS

Shukla, Ankur (Norway)¹; Toppe, Aleksander Lygren (Norway)¹

1 - Institute for Energy Technology, Halden, Norway

Shukla, Ankur OC - (27768) - THE EMERGING EU REGULATORY LANDSCAPE: RISKS, OPERATIONAL CHALLENGES, AND OPPORTUNITIES FOR COHERENT COMPLIANCE <u>Shukla, Ankur</u> (Norway)¹; De, Kanjar (Sweden)² 1 - Institute for Energy Technology, Halden, Norway; 2 - RISE Research Institutes of Sweden
Ingvarson, Johan OC - (26182) - CONSIDERING TOTAL DEFENCE IN SPATIAL PLANNING <u>Ingvarson, Johan</u> (Sweden)¹; Frykmer, Tove (Sweden)¹; Cedergren, Alexander (Sweden)¹; Hassel, Henrik (Sweden)¹ 1 - Lund University, Division of Risk Management and Societal Safety
Jore, Sissel Haugdal OC - (26523) - RESPONSIBILITY GAPS IN NORWAY'S TOTAL DEFENCE MODEL: LESSONS FROM THE PETROLEUM SECTOR AND THE CASE OF SEABED MINERAL SECURITY <u>Jore, Sissel Haugdal</u> (Norway)¹; Engen, Ole Andreas Hegland (Norway)¹ 1 - University of Stavanger
Jain, Aishvarya Kumar OC - (26530) - SYSTEMIC FUNCTIONS AND RESEARCH GAPS ADDRESSED WHEN IDENTIFYING PERSONS ON THE MOVE USING MOBILE PHONES AT EU BORDERS Häring, Ivo (Germany)¹; Höflinger, Fabian (Germany)¹; <u>Jain, Aishvarya Kumar</u> (Germany)¹; Fehling-Kaschek, Mirjam (Germany)¹; Lickert, Benjamin (Germany)¹; Rouchouze, Bruno (France)²; Oltra, Javier (France)²; Brandejsky, Pavel (France)²; Grebenc, Andrej (Slovenia)³; Strehovec, Tadej (Slovenia)³; Valentan, Sebastijan (Slovenia)³; Emeršič, Žiga (Slovenia)⁴; Vladušič, Daniel (Slovenia)⁵; Ilijaš, Robert (Croatia)⁶; Kohn, Bernhard (Austria)⁷; Lorünser, Thomas (Austria)⁷; Jarvet, Tanel (Estonia)⁸; Dose, Michael (Germany)⁹; Blank, Boris (Germany)⁹; Tolle, Didier (France)¹⁰; Mouille, Stefane (France)¹¹ 1 - Fraunhofer EMI, Freiburg, Germany; 2 - Thales Group, Meudon, France; 3 - Project Development, University of Ljubljana, Slovenia; 4 - Computer Vision Laboratory, University of Ljubljana, Slovenia; 5 - XLAB d.o.o., Ljubljana, Slovenia; 6 - Identity Consortium d.o.o., Varaždin, Croatia; 7 - AIT, Wien, Austria; 8 - CAFA Tech OU, Tallin, Estonia; 9 - IDEMIA Identity & Security Germany AG, Bochum, Germany; 10 - VSENS, Aix-en-provence, France; 11 - Cabinet Louis Reynaud SASU, La Ciotat, France
Xu, Ahui OC - (27887) - RESEARCH ON THE ELECTRONIC AND ELECTRICAL ARCHITECTURE OF MULTI-FUNCTIONAL INTELLIGENT INSPECTION USV FOR INLAND WATERWAYS <u>Xu, Ahui</u> (China)¹; Wen, Yuanqiao (China)¹; Huang, Yamin (China)¹; Tan, Hengtao (China)¹; Tian, Kang (China)¹ 1 - Wuhan University Of Technology

Session: MA12 – Risk Management **Meeting room 7 - Level -1**

Chairs

Marcelo Hazin Alencar

Jacob Taarup

Speaker

Taarup-Esbensen, Jacob OC - (26134) - THE RISK-BASED APPROACH TO DIMENSIONING OF ARCTIC EMERGENCY RESPONSE – REAL AND PERCEIVED EMERGENCY RESPONSE IN GREENLAND AND

SVALBARD

Taarup-Esbensen, Jacob (Denmark)¹

1 - University College Copenhagen

Bekesiene, Svajone OC - (27631) - SYSTEMATIC RISK MANAGEMENT AND RESILIENCE IN MILITARY SUPPLY CHAINS: A STRUCTURAL EQUATION MODELLING STUDY OF THE LITHUANIAN ARMED FORCES

Bekesiene, Svajone (Lithuania)¹; Navickienė, Olga (Lithuania)¹

1 - General Jonas Žemaitis Military Academy of Lithuania

Ferreira, José OC - (27752) - FROM APPRAISAL TO ACTION: TRACKING THE IMPACT OF PSYCHOSOCIAL MONITORING AND INTERVENTIONS ON RISK PERCEPTION AND COMMUNITY COPING

Ferreira, José (Portugal)¹; Palma-Oliveira, José (Portugal)¹

1 - Factor Social

Steensrud Øverland, Linn OC - (26165) - THE COST OF DOING BUSINESS: A COLLABORATIVE APPROACH TO HYBRID THREATS - A REGULATORY PERSPECTIVE

Steensrud Øverland, Linn (Norway)¹; Campe Pettersen, Truls (Norway)¹; Solheim Teigen, Kristian (Norway)¹

1 - Norwegian Ocean Industry Authority

Schauer, Stefan OC - (26171) - POLICY-ORIENTED FRAMEWORK FOR RISK AND RESILIENCE INDICATORS IN FMCG SUPPLY CHAINS

Zelenajova, Anna (Austria)¹; Latzenhofer, Martin (Austria)¹; Schauer, Stefan (Austria)¹

1 - Austrian Institute of Technology

Osvalder, Anna-Lisa OC - (26275) - CO-CREATING CRISIS PREPAREDNESS: INCLUSIVE FIELD EXERCISES WITH PERSONS WITH DISABILITIES FOR ENHANCED RISK MANAGEMENT

Osvalder, Anna-Lisa (Sweden)¹; Stark, Elin (Sweden)¹; Borell, Jonas (Sweden)²

1 - Chalmers University of Technology; 2 - Lund University

Session: MA8 – Organizational Factors and Safety Culture **Meeting room 8 - Level -1**

Chairs

Marja Ylonen

Speaker

Rigaud, Eric OC - (26235) - THE ORGANIZATIONAL BLACK BOX: UNDERSTANDING SYSTEMIC VULNERABILITIES AT THE SHARP END/BLUNT END INTERFACE

Rigaud, Eric (France)¹; Quiriconi, Elliot (France)¹; Delaitre, Didier (France)¹

1 - MINES PARIS

Gnoni, Maria Grazia OC - (26503) - STRUCTURED APPROACH FOR ANALYSING NEAR MISS EVENTS: AN APPLICATION IN THE PORT SECTOR

Gnoni, Maria Grazia (Italy)¹; Tornese, Fabiana (Italy)¹; Guglielmi, Armando (Italy)²; Pellicci, Mauro (Italy)²; De Merich, Diego (Italy)²

1 - university of salento; 2 - Inail

Bekesiene, Svajone OC - (27632) - ORGANIZATIONAL FACTORS AND SAFETY CULTURE IN RETAINING PROFESSIONAL SOLDIERS: EVIDENCE FROM THE LITHUANIAN ARMED FORCES

Bekesiene, Svajone (Lithuania)¹; Prakapienė, Dalia (Lithuania)¹; Kazlauskaitė-Markelienė, Rolanda (Lithuania)¹

1 - General Jonas Žemaitis Military Academy of Lithuania

Linden, Alina OC - (24051) - A NEW PERSPECTIVE ON SAFETY MANAGEMENT - SAFETY COMMUNICATION FOR SAFETY CULTURE IN THE SWEDISH PULP- AND PAPER INDUSTRY

Linden, Alina (Sweden)¹; Ulvenblad, Pia (Sweden)¹; Barth, Henrik (Sweden)¹; Nikko, Airi (Sweden)²

1 - Halmstad University; 2 - Billerud

Nilsen Hordvik, Bente OC - (26184) - LEARNING FROM NORMAL WORK: PRACTICAL INSIGHTS INTO HOW FLOATING OFFSHORE WIND MAINTENANCE IS PERFORMED AND ADJUSTED TO ENHANCE SAFETY

Nilsen Hordvik, Bente (Norway)¹; Dreyer, Leif Ole (Norway)¹

1 - Western Norway University of Applied Sciences (HVL)

Holen, Siri OC - (26264) - INTERORGANIZATIONAL OPERATIONS IN NORWEGIAN FISH FARMING: A STUDY OF PERSONNEL SAFETY FOR SUBCONTRACTOR AND FISH FARMING EMPLOYEES

Holen, Siri (Norway)¹; Thorvaldsen, Trine (Norway)¹; Slette, Hans Tobias (Norway)¹; Størkersen, Kristine (Norway)¹

1 - SINTEF Ocean, 7465 Trondheim

SS-20: Advances in Strategic and Operational Risk Assessment for Maritime Traffic **Meeting room 9 - Level -1**

Chairs

Floris Goerlandt

Shiqi Fan

Speaker

Li, Wanning; Fan, Shiqi SS - (26212) - PREDICTING SEAFARER TAKEOVER INTENTIONS FOR SAFE HUMAN-MACHINE COLLABORATION IN MARITIME AUTONOMOUS SURFACE SHIPS

Li, Wanning (Portugal)¹; Fan, Shiqi (Portugal)¹

1 - Wuhan University of Technology, China

Liu, Lingling (Shanghai) SS - (26257) - MARITIME TRAFFIC RISK MONITORING USING TIME-EXTENDED STOCHASTIC PETRI NETS: A CASE STUDY ON COLLISION PREVENTION FOR LNG-FUELED VESSELS
Shu, Shenping (China)¹; Liu, Lingling (China)¹; Chen, Yan (China)¹; Zhou, Lili (China)¹; Fan, Cunlong (China)¹

1 - Shanghai Maritime University

Zyczkowski, Marcin SS - (26341) - INTEGRATED RISK AND AVAILABILITY ASSESSMENT FOR MARITIME TRAFFIC AND FLOATING ARCHITECTURE CONNECTIVITY

Zyczkowski, Marcin (Portugal)¹; Zyczkowska, Krolina (Portugal)¹

1 - Gdańsk University of Technology, Poland

Goerlandt, Floris SS - (26350) - AN ANALYSIS OF WATERWAY RISK ANALYSIS RISK CONTROL OPTIONS' EFFECTIVENESS BASED ON SIRA REPORTS

Goerlandt, Floris (Portugal)¹; Adeli, Mehdi (Portugal)¹

1 - Dalhousie University, Canada

Montewka, Jakub SS - (26450) - ASSESSING OPERATIONAL RISK IN SHIP-SHIP ENCOUNTERS CONSIDERING HUMAN PERFORMANCE AND DATA ANALYSIS – REVIEW AND ALARP-INSPIRED FRAMEWORK

Zarzycki, Filip (Portugal)³; Gil, Mateusz (Portugal)¹; Owen, Douglas (Portugal)²; Montewka, Jakub (Portugal)³

1 - Gdynia Maritime University, Poland; 2 - Aalto University; 3 - Gdańsk University of Technology, Poland

Kazimierska, Olga SS - (26511) - TOWARDS STRATEGIC RISK ASSESSMENT METHOD BASED ON FIRST PRINCIPLES

Kazimierska, Olga (Portugal)¹; Gil, Mateusz (Portugal)²; Krata, Przemysław (Portugal)¹; Altan, Yigit (Portugal)³; Adali, Berk (Portugal)³; Montewka, Jakub (Portugal)¹; Buyukkivanc, Kaan (Portugal)³

1 - Gdańsk University of Technology, Poland; 2 - Gdynia Maritime University, Poland; 3 - Ozyegin University, Turkey

Yang, Zaili SS - (26515) - INCORPORATION OF SYSTEM IDENTIFICATION BASED SHIP MANOEUVRING MODEL INTO REAL-TIME COLLISION RISK ANALYSIS

Celik, Cihad (United Kingdom)¹; Li, Huanhuan (United Kingdom)²; Yang, Zaili (United Kingdom)¹

1 - Liverpool Logistics, Offshore and Marine Research Institute, Liverpool John Moores University, Liverpool, UK; 2 - School of Engineering, University of Southampton, Southampton, UK

Zhang, Boyuan SS - (26517) - A METHOD FOR CHARACTERIZATION OF SHIP COLLISION AVOIDANCE BEHAVIOUR

Zhang, Boyuan (United Kingdom)¹; Rong, Hao (United Kingdom)¹; Yang, Zaili (United Kingdom)¹

1 - Liverpool John Moores University

Chairs

Paul Lee

Joachim Grimstad

Speaker

Utne, Ingrid Bouwer SS - (26194) - RISK-AWARE OBSTACLE AVOIDANCE ALGORITHM FOR REAL-TIME APPLICATIONS

Kaya, Ozan (Norway)¹; Gezer, Emir Cem (Norway)¹; Skjetne, Roger (Norway)¹; Utne, Ingrid Bouwer (Norway)¹

1 - Department of Marine Technology, Norwegian University of Science and Technology

Utne, Ingrid Bouwer SS - (26286) - MISSION PLANNING FOR AUTONOMOUS SYSTEMS INTEGRATING SOCIO-TECHNICAL-ECOLOGICAL RISKS

Utne, Ingrid Bouwer (Norway)¹; Johansen, Tor Arne (Norway)²; Johnsen, Geir (Norway)³; Ludvigsen, Martin (Norway)¹; Pizarro, Oscar (Norway)¹; Ødegård, Øyvind (Norway)⁴

1 - Department of Marine Technology, Norwegian University of Science and Technology (NTNU); 2 - Department of Engineering Cybernetics, NTNU; 3 - Department of Biology, NTNU; 4 - NTNU University Museum

Yeganeh Khaksar, Reza SS - (26418) - USING LARGE LANGUAGE MODELS (LLMS) TO COMPLEMENT EXPERT-BASED HAZARD IDENTIFICATION UNDER LIMITED OPERATIONAL DATA FOR REMOTELY PILOTED SHIPS

Yeganeh Khaksar, Reza (Portugal)^{1,2}; Khorasani, Mahsa (Portugal)¹; Farokhi, Raheleh (Portugal)^{1,2}; A. Valdez Banda, Osiris (Portugal)^{1,2}

1 - Department of Energy and Mechanical Engineering, Marine and Arctic Technology, Research Group on Safe and Efficient Marine and Ship Systems, Aalto University, Espoo, Finland; 2 - Kotka Maritime Research Centre, Kotka, Finland

Wang, Shuai SS - (27687) - MANAGING CHANGE IN MARITIME AI: A SEMANTIC AND MODULAR FRAMEWORK FOR ADAPTIVE MARITIME SYSTEMS

Knutsen, Knut Erik (Norway)¹; Karandikar, Nikita (Norway)¹; Wang, Shuai (Norway)¹

1 - DNV

Gorska, Kaja SS - (27753) - A FRAMEWORK FOR TESTING, VERIFICATION, AND VALIDATION OF MARITIME AUTONOMOUS SURFACE SHIPS

Gorska, Kaja (United Kingdom)¹; Theotokatos, Gerasimos (United Kingdom)¹; Boulougouris, Evangelos (United Kingdom)¹

1 - University of Strathclyde

Lee, Paul SS - (27803) - RISK AWARENESS – BRIDGING THE GAP BETWEEN SAFETY AND AI DOMAINS
Lee, Paul (Portugal)¹; Utne, Ingrid Bouwer (Portugal)¹; Kim, Ekaterina (Portugal)¹

1 - Department of Marine Technology, Norwegian University of Science and Technology (NTNU)

Mosleh, Ali SS - (27763) - TOWARDS SAFE DEPLOYMENT OF AUTONOMOUS VEHICLES: RESPONSIBILITIES, HAZARDS, AND METRICS IDENTIFICATION BASED ON STPA METHODOLOGY
 Cheng, Tingting (United States of America)¹; Correa-Jullian, Camila (United States of America)¹; Singh, Siddhant (United States of America)¹; Mosleh, Ali (United States of America)¹; Ma, Jiaqi (United States of America)¹; Stewart, Theresa (United States of America)¹
 1 - University of California Los Angeles

12:30

14:00 **Lunch** **Forum Braga Foyer - Level 0**

14:00

15:30 **Parallel Sessions**

Session: MA11 – Risk assessment **Grand Auditorium - Level 0**

Chairs

Blazhe Gjorgiev

Matteo Spada

Speaker

Lee, Donghun OC - (27865) - ANALYZING INTERACTION HAZARDS OF BATTERY-ELECTRIC FERRIES AND HYDROGEN FUELED VEHICLES USING STPA
Lee, Donghun (Korea, Republic of)¹; Kim, Hyungju (Norway)¹
 1 - NTNU

Hong, Sein OC - (29035) - QUANTIFICATION OF FAILURE PROBABILITIES FOR THE I-SMR REACTOR VESSEL USING MELCOR-BASED UNCERTAINTY ANALYSIS
Hong, Sein (Korea, Republic of)¹; Kang, Hyun Gook (United States of America)²; Cho, Jaehyun (Korea, Republic of)¹
 1 - Department of Energy Systems Engineering, Chung-Ang University (CAU), Korea, Republic of; 2 - Department of Mechanical, Aerospace, and Nuclear Engineering, Rensselaer Polytechnic Institute (RPI), United States

Kim, Yunho OC - (29037) - DEVELOPMENT OF EFFECTIVE-DOSE-BASED RISK PROFILES FOR EXHAUSTIVE SCENARIOS IN NUCLEAR POWER PLANTS
Kim, Yunho (Korea, Republic of)¹; Cho, Jaehyun (Korea, Republic of)¹
 1 - Chung-Ang University

Hasbullah, Muhammad Irsyad OC - (29145) - MODELLING HUMAN–MACHINE INTERACTION RISKS IN REMOTE MARITIME AUTONOMOUS SURFACE SHIP (MASS) OPERATIONS USING STPA AND BAYESIAN NETWORKS
Hasbullah, Muhammad Irsyad (United Kingdom)¹; Theotokatos, Gerasimos (United Kingdom)¹
 1 - University of Strathclyde

Beßmann, Lara OC - (26096) - A PROBABILISTIC MODEL FOR EVALUATING CRITICAL MARITIME INFRASTRUCTURE SECURITY <u>Beßmann, Lara</u> (Germany)¹; Majri, Sarra (Germany)¹; Stockbrügger, Jan (Germany)¹; Sill Torres, Frank (Germany)¹ 1 - German Aerospace Center
Wollweber, Thorsten OC - (27647) - A FULL-SCALE SIMULATION APPROACH TO MAPPING CYBER-THREATS TO AVIATION SAFETY RISKS Taurino, Damiano (Italy)¹; <u>Wollweber, Thorsten</u> (Germany)²; Stieren, Leonie (Italy)¹; Muehlhausen, Thorsten (Germany)³; Kullman, Kaur (Germany)³ 1 - Deep Blue Srl; 2 - Airbus Protect; 3 - DLR
Coutinho, Maria Eduarda OC - (29177) - PROPOSED TEST METHOD FOR CENTER BOUND RISK ASSESSMENT: A CASE STUDY <u>Coutinho, Maria Eduarda</u> (Brazil)¹; Santos, Antonio Carlos (Brazil)¹; Delalibera, Rodrigo Gustavo (Brazil)¹ 1 - Federal University of Uberlândia
Koniorczyk, Marcin OC - (28976) - STOCHASTIC ANALYSIS FOR SHEAR FAILURE OF REINFORCED CONCRETE BEAMS <u>Koniorczyk, Marcin</u> (Poland)¹; Rogowski, Janusz (Poland)¹; Szczech, Damian (Poland)¹ 1 - Lodz University of Technology

Norisk Workshop **Small Auditorium - Level 1**

Pitch sessions Round 1

Speaker

Framework for a risk-based decision-making process for roadway bridge management: comparative analysis of European practice and Brazil - Pedro Nogueira De Resende
Data-driven analytics for structural damage identification in railway bridges - Begashaw Worku Yifru
Reinforcement Learning framework for slope stability level assessment based on InSAR data - Temesgen Emire
Risk and resilience assessment of critical infrastructure in the event of extreme weather events: a methodological framework accounting for the implementation of nature-based solutions - Osuagwu Morris Chinonye
Risk-Based Assessment of Pavement Design Methods for Foamed Bitumen Stabilised Materials - Thankgod Alexander
Development of a test method to assess the corrosion rate for carbonated concrete - Asma Yahiaoui
Assessment of Climate Change Effects on Reinforced Concrete Structures Using AI-Driven Chloride Ingress Modeling - Haixian Li
Modeling and Experimental Study of Chloride-Induced Degradation in Concrete - Florence Gong

Multi-scale characterization of a calco-magnesian agglomerate formed at a pilot site for coastal protection. - S M Omar Faruque
Holistic reliability assessment of simple reinforced concrete structures - Wilbert Jonathan Yaury
Advanced earthquake losses modelling for risk transfer purposes - Alejandro Hincapie Giraldo

15:15
15:30 Discussion

SS-19: Safety Challenges and Emerging Risks of the Future Healthcare and Medtech Industry **Congress Room 1 - Level 1**

Chairs

Rasa Remenyte-Prescott

Simone Guarino

Speaker

Zaitseva, Elena SS - (27903) - RELIABILITY ANALYSIS FOR MEDICAL ERROR

Zaitseva, Elena (Slovakia)¹; Levashenko, Vitaly (Slovakia)¹

1 - Zilinska Univerzita v Ziline

Remenyte-Prescott, Rasa SS - (26181) - INTEGRATING AN AUTOMATED ACTION RECOGNITION WITH A SIMULATION APPROACH TO ANALYSE THE RISKS OF THE NEWBORN LIFE SUPPORT ALGORITHM
Tan, Alfian (Indonesia)¹; Remenyte-Prescott, Rasa (United Kingdom)²; Egede, Joy (United Kingdom)³; Sharkey, Don (United Kingdom)⁴; Valstar, Michel (United Kingdom)⁵

1 - Centre for Manufacturing Systems, Industrial Engineering Department, Parahyangan Catholic University; 2 - Resilience Engineering Research Group, University of Nottingham, UK; 3 - Computer Vision Lab, University of Nottingham, UK; 4 - Centre for Perinatal Research, School of Medicine, University of Nottingham, UK; 5 - BlueSkeye AI

Lame, Guillaume SS - (27928) - THE IMPACT OF INTRAOPERATIVE COMPUTED TOMOGRAPHY ON INTERPROFESSIONAL WORK IN THE OPERATING THEATRE: A QUALITATIVE HUMAN FACTORS INVESTIGATION

Lame, Guillaume (France)¹; Gaoua, Elyes (France)¹; Heurtault, Basile (France)¹; Blanié, Antonia (France)^{2,3}; Bouthors, Charlie (France)^{2,4}; Benhamou, Dan (France)^{2,3}

1 - Laboratoire de Génie Industriel, CentraleSupélec, Paris Saclay University; 2 - Simulation Center LabForSIMS, Bicêtre Medical School, Paris-Saclay University; 3 - Assistance Publique-Hôpitaux de Paris, Hôpital du Kremlin-Bicêtre, Department of Anesthesia, Intensive Care and Perioperative Medicine; 4 - Assistance Publique - Hôpitaux de Paris, Hôpital Bicêtre, Service de Chirurgie Orthopédique Et Traumatologique

Guarino, Simone SS - (27785) - PRIVACY-PRESERVING PROCESS MINING FOR CLINICAL PATHWAY ANALYSIS AND CLASSIFICATION

Vitale, Francesco (Italy)¹; Mazzocca, Nicola (Italy)¹; Guarino, Simone (Italy)¹

1 - University of Naples Federico II

SS-39: Current status and future prospects in safety and security cultures and organizational factors **Congress**

Room 2 - Level 1

Chairs

Marja Ylonen

Speaker

Hassel, Henrik SS - (28979) - ORGANIZATIONAL PREPAREDNESS FOR EXPECTED AND UNEXPECTED EVENTS - BALANCING ANTICIPATION AND ADAPTATION

Hassel, Henrik (Sweden)¹; Cedergren, Alexander (Sweden)¹

1 - Division of risk management, Lund University

Konstantinidou, Myrto SS - (27709) - EVALUATION OF SAFETY CULTURE THROUGH FIELD RESEARCH IN A HYDROCARBON EXPLORATION AND EXPLOITATION COMPANY

Mallas, Konstantinos (Greece)¹; Konstantinidou, Myrto (Greece)¹

1 - Systems Reliability and Industrial Safety Laboratory, NCSR DEMOKRITOS

Konstantinidou, Myrto SS - (27711) - SAFETY CULTURE IN INDUSTRIAL ENVIRONMENT AND THE FACTORS INFLUENCING ITS EFFECTIVE IMPLEMENTATION IN THE WORKPLACE

Bouzinidis, Christos (Greece)¹; Konstantinidou, Myrto (Greece)¹

1 - Systems Reliability and Industrial Safety Laboratory

Ylonen, Marja SS - (26497) - WHY SHOULD WE ABANDON OR RETAIN THE CONCEPT OF SAFETY CULTURE?

Ylonen, Marja (Norway)¹

1 - University of Stavanger

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Christian Tanguy

Edoardo Patelli

Speaker

Postiglione, Fabio OC - (26385) - A WIENER DEGRADATION PROCESS WITH CHANGE-POINTS FOR BATTERY DEGRADATION DATA

Giorgio, Massimiliano (Italy)¹; Postiglione, Fabio (Italy)²; Pulcini, Gianpaolo (Italy)³

1 - Dipartimento di Ingegneria Industriale, Università di Napoli Federico II, Italia; 2 - Dipartimento di Ingegneria dell'Informazione ed Elettrica e Matematica Applicata, Università degli Studi di Salerno, Italia; 3 - Istituto di Scienze e Tecnologie per Energia e Mobilità Sostenibili (STEMS), CNR, Napoli, Italia

Baghel, Shanya OC - (26389) - CONSTRAINED BAYESIAN D-OPTIMAL DESIGN FOR ACCELERATED LIFE TESTING OF ONE-SHOT DEVICES

Baghel, Shanya (Korea, Republic of)¹; Bae, Suk Joo (Korea, Republic of)¹
1 - Department of Industrial Engineering, Hanyang University, Seoul, Korea

Aguirre, Veronica OC - (26393) - ADVANCING COMPUTATIONAL NETWORK ANALYSIS METHODS FOR CRITICAL INFRASTRUCTURE RESILIENCE: INTEGRATING CENTRALITY METRICS AND MODEL SIMPLIFICATION FOR EFFICIENT FAILURE SIMULATIONS

Aguirre, Veronica (United States of America)¹; Hackl, Jürgen (United States of America)¹
1 - Princeton University

Thakur, Adarsh Ratan OC - (26410) - TOWARDS AUTOMATED MARKOV MODELLING AND SIMULATION OF BLACK-BOX SYSTEMS

Thakur, Adarsh Ratan (Germany)¹; Häring, Ivo (Germany)¹; Fehling-Kaschek, Mirjam (Germany)¹
1 - Fraunhofer EMI

Xie, Xiwen OC - (26417) - A PHYSICS-INFORMED NEURAL NETWORK-BASED METHOD FOR RELIABILITY ANALYSIS OF STOCHASTIC DEGRADATION SYSTEMS

Xie, Xiwen (China)¹; Yin, Changzheng (China)¹; Peng, Changhong (China)¹
1 - University of Science and Technology of China

Meslem, Doha OC - (26427) - TOWARDS DEVELOPING A MULTIVARIATE RELIABILITY MODELING FRAMEWORK FOR ANALYZING DEGRADATION BEHAVIOR, REMAINING USEFUL LIFE, AND FAILURE PREDICTION

Meslem, Doha (Germany)¹; Hoffe, Leon (Germany)¹; Bracke, Stefan (Germany)¹
1 - Chair of Reliability and Risk Analytics, University of Wuppertal

Liu, Xuan OC - (26442) - A METHODOLOGY FOR OPTIMIZING TIME-SENSITIVE NETWORK ROUTING SCHEMES BASED ON A DUAL GRAPH ATTENTION NETWORK

Liu, Xuan (China)¹; Zhang, Xudong (China)¹; Li, Yang (China)²; Qin, Hongmao (China)²; Luo, Nan (China)³; Zhang, Jianhong (China)³

1 - Beijing Institute of Technology; 2 - Hunan University; 3 - Xiamen Jinlong United Automobile Industry Co., Ltd

Luo, Yi OC - (26540) - UNIFIED FRAMEWORK FOR HYBRID ALEATORY AND EPISTEMIC UNCERTAINTY PROPAGATION VIA DECOUPLED MULTI-PROBABILITY DENSITY EVOLUTION METHOD

Luo, Yi (Germany)¹; Lyu, Meng-Ze (Germany)¹; Broggi, Matteo (Germany)¹; Thiele, Marko (Germany)²; Fragkoulis, Vasileios (United Kingdom)³; Beer, Michael (Germany)¹

1 - Institute for Risk and Reliability, Leibniz University Hannover; 2 - SCALE GmbH; 3 - Department of Civil and Environmental Engineering, University of Liverpool

Grimstad, Joachim OC - (26361) - GRAPH NEURAL NETWORKS FOR BAYESIAN NETWORK ESTIMATION

Chauhan, Simran (Germany)¹; Grimstad, Joachim (Germany)¹; Morozov, Andrey (Germany)¹
1 - University of Stuttgart

SS-24: Human Factors for Collaborative Intelligence Applications in Safety Critical Domains **Congress Room 4 - Level 1**

Chairs

Maria Chiara Leva

Ines Filipa Fernandes Ramos

Carlo Caiazzo

Speaker

Caiazzo, Carlo SS - (27635) - DEVELOPMENT OF INCLUSIVE AND TECHNOLOGY-SUPPORTED ASSEMBLY WORKPLACES: AN AXIOMATIC DESIGN APPROACH
Caiazzo, Carlo (Portugal)¹; Francalanza, Emmanuel (Portugal)²; Bonello, Amberlynn (Portugal)²; Barrero, Alejandro (Portugal)¹; Bataleblu, Aliasghar (Portugal)¹; Mallia, Jasmine (Portugal)²; Lanzone, Marco (Portugal)¹; Rauch, Erwin (Portugal)¹; Dallasega, Patrick (Portugal)¹; Gualtieri, Luca (Portugal)¹
1 - Free University of Bolzano; 2 - University of Malta

Baradziej, Simon SS - (27722) - SAFETY OR SURVEILLANCE? THE 'SAFETY EXCEPTION' FOR NEUROERGONOMIC MONITORING IN THE EU AI ACT
Baradziej, Simon (Portugal)¹
1 - University of Tromso, Norway

Gianini, Gabriele SS - (27774) - INTEGRATING HETEROGENEOUS UNCERTAINTIES IN COLLABORATIVE INTELLIGENCE FOR SAFETY-CRITICAL SYSTEMS
Gianini, Gabriele (Portugal)¹; Mio, Corrado (Portugal)²; Chicco, Davide (Portugal)¹; Lin, Jianyi (Portugal)³
1 - University of Milano Bicocca, Italy; 2 - Khalifa University of Science and Technology, Abu Dhabi, UAE; 3 - Università Cattolica del Sacro Cuore, Milan, italy

Fernandes Ramos, Ines Filipa SS - (30426) - EXCHANGE OF BEST PRACTICES IN COLLABORATIVE INTELLIGENCE FOR SAFETY CRITICAL APPLICATIONS
Fernandes Ramos, Ines Filipa (Ireland)¹; Leva, Maria Chiara (Ireland)¹; Gianini, Gabriele (Italy)²; Abbas, Ammar (Ireland)³; Amazu, Chidera (Italy)⁴; Long, Philip (Ireland)⁵; Baldissone, Gabriele (Italy)⁴; Mietkiewicz, Joseph (Ireland)¹
1 - TU Dublin; 2 - University Milano Bicocca; 3 - ADAPT Centre TCD; 4 - POLITO; 5 - Atlantic Tehcnological University

Ramos Fernandes, Ines Filipa SS - (30427) - FITTER: EVALUATING TWIN TRANSITION POLICIES AND THEIR IMPACTS ON VULNERABLE GROUPS. EXPLORING THE USE OF GEN AI SUPPORT IN THE EU POLICY EVLUATION FRAMEWORK
Ramos Fernandes, Ines Filipa (Ireland)¹; Leva, Maria Chiara (Ireland)¹; Clavero, Sara (Ireland)¹; Zarehparast, Mehdi (Spain)²; Santarremigia, Francisco (Spain)²; Akapoor, Aditya (Spain)²; Bjegojevic, Bojana (Ireland)¹; Salomon, Oriana (Italy)³; Sangiuliano, Maria. (Italy)³; Vine, Lluís (Spain)⁴; Molero, Gemma (Spain)²

1 - TU Dublin; 2 - AITEC; 3 - Smart Venice; 4 - Eurecat

SS-01: Advancements in Risk Assessment in Aviation and Space System **Congress Room 5 - Level 1**

Chairs

Mario P Brito

Moacyr Cardoso Jr

Speaker

Ronconi De Oliveira, Marina; Machado Cardoso-Junior, Moacyr SS - (26325) - THE EYES TELL THE LOAD: SACCADIC INTRUSIONS AS INDICATORS OF COGNITIVE DEMAND IN LATENCY CONDITIONS

Ronconi De Oliveira, Marina (Brazil)¹; Rosa, Marina (Brazil)¹; Rehder, Ivan (Brazil)¹; Villani, Emilia (Brazil)¹; Machado Cardoso-Junior, Moacyr (Brazil)¹

1 - Aeronautics Institute of Technology, Brazil

Alipour Bonab, Shahin SS - (27873) - INTELLIGENT SAFETY MONITORING OF SELF-PRESSURISED LIQUID HYDROGEN TANKS FOR FUTURE CRYO-ELECTRIC AIRCRAFT CONCEPT

Yazdani-Asrami, Mohammad (United Kingdom)¹; Abdolahi, Mohsen (United Kingdom)¹; Song, Wenjuan (United Kingdom)¹; Flynn, David (United Kingdom)¹; Alipour Bonab, Shahin (United Kingdom)¹

1 - *CryoElectric Research Lab, Propulsion, Electrification & Superconductivity group, Autonomous Systems and Connectivity division, James Watt School of Engineering, University of Glasgow, Glasgow, G12 8QQ, United Kingdom

Costa, Cássia SS - (27906) - IMPACT OF NEW TECHNOLOGIES ON THE DECISION-MAKING PROCESS OF PILOTS ON BOARD NEXT-GENERATION AIRCRAFTS

Costa, Cássia (Portugal)¹; Castilho, Diogo (Portugal)¹

1 - ITA

SS-38: From Monitoring to Management: Digital Twins and Predictive Modelling for the Resilient Maintenance of Transport Infrastructure **Meeting room 6 - Level -1**

Chairs

Maria José Morais

Jabez Nesackon Abraham

Speaker

Ampofo, Stephen Kwadwo Ampoma SS - (26534) - A RISK-INFORMED FRAMEWORK FOR MAINTENANCE DECISION-MAKING OF RAILWAY OVER BRIDGES UNDER SEISMIC INFLUENCE

Ampofo, Stephen Kwadwo Ampoma (Ghana)¹; Sousa, Hélder S. (Portugal)¹; Matos, José C. (Portugal)¹; Morais, Maria José (Portugal)¹

1 - ISISE, Department of Civil Engineering, University of Minho, Guimarães, Portugal

Sousa, Hélder S. SS - (28941) - DIGITALIZATION AND RISK-INFORMED BRIDGE MANAGEMENT IN EUROPE: A COMPARATIVE STUDY Morais, Maria José (Portugal)¹; <u>Sousa, Hélder S.</u> (Portugal)¹; Matos, José C. (Portugal)¹; Kraňovanec, Jakub (Portugal)²; Nicoletti, Vanni (Portugal)³; Moravčík, Martin (Portugal)²; Gara, Fabrizio (Portugal)³ 1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - Department of Structures and Bridges, Faculty of Civil Engineering, University of Žilina, Univerzitná, Žilina, Slovakia; 3 - Department of Construction, Civil Engineering, and Architecture, DICEA, Università Politecnica delle Marche, Ancona, Italy
Morais, Maria José SS - (28939) - COMPARING ROADWAY AND RAILWAY BRIDGE MAINTENANCE: PERFORMANCE INDICATORS, PREDICTIVE MODELS AND PATH TO DIGITALIZATION <u>Morais, Maria José</u> (Portugal)¹; Sousa, Hélder S. (Portugal)¹; Matos, José C. (Portugal)¹; Araújo, Maria Madalena (Portugal)² 1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - University of Minho, ALGORITMI Research Centre, Department of Production and Systems, Guimarães, Portugal
Nesackon Abraham, Jabez SS - (28954) - SEMI-SUPERVISED PCA–DEEP AUTOENCODER FRAMEWORK FOR ANOMALY DETECTION AND RESILIENT PREDICTIVE MAINTENANCE IN BRIDGE INFRASTRUCTURE. <u>Nesackon Abraham, Jabez</u> (Portugal)¹; Matos, Jose C. (Portugal)¹; Dang, Son N. (Portugal)¹; Samuel Jayaraj, Jerusha (Portugal)²; Valluzzi, Maria Rosa (Italy)³ 1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - Department of Information Systems, University of Minho, Guimarães, Portugal; 3 - Department of Cultural Heritage, University of Padova, Piazza Capitaniato 7, 35139 Padova, Italy
Morais, Maria José SS - (28940) - TOWARD A DIGITAL TWIN FRAMEWORK FOR RAILWAY BRIDGE MAINTENANCE: INDICATORS, PREDICTIVE MODELLING AND RISK–RELIABILITY CONSIDERATIONS <u>Morais, Maria José</u> (Portugal)¹; Sousa, Hélder S. (Portugal)¹; Matos, José C. (Portugal)¹; Araújo, Maria Madalena (Portugal)² 1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - University of Minho, ALGORITMI Research Centre, Department of Production and Systems, Guimarães, Portugal
Kibriya, Ghulam SS - (29062) - DATA-INFORMED STRUCTURAL RELIABILITY OF POST-TENSIONED CONCRETE BRIDGES <u>Kibriya, Ghulam</u> (Portugal)¹; Ariza, Monica (Portugal)¹; Komarizad, Milad (Portugal)¹; Morais, Maria José (Portugal)¹ 1 - Department of Civil Engineering, University of Minho, ISE, ARISE, Portugal

Session: MA12 – Risk Management **Meeting room 7 - Level -1**

Chairs

Lucas Borges Leal Da Silva

Abderrahim Krini

Speaker

Mazri, Chabane OC - (26366) - SAFETY PERFORMANCE: A CONTROL THEORY PERSPECTIVE ON THE USE OF INCIDENTS AND ACCIDENTS IN MEASURING SAFETY

Mazri, Chabane (France)¹; Anfriani, Alexandre (France)²; Bay, Delphine (France)²

1 - INERIS; 2 - EPSF

Solli, Bjørnm-Erik OC - (26395) - BEYOND THE RISK MATRIX: ETHNOGRAPHIC INSIGHTS INTO THE ILLUSION OF CONTROL IN NATO'S RISK MANAGEMENT

Solli, Bjørnm-Erik (Norway)¹; Borrie, Andy (United Kingdom)²

1 - North Atlantic Treaty Organization & Supreme Allied Commander Transformation's Professional Doctorate Program, Norway; 2 - Made to Measure Mentoring Limited & Gloucestershire University, England

He, Zhichao OC - (26398) - EMERGENCY MANAGEMENT OF CHEMICAL ACCIDENTS BASED ON MULTI-HAZARD ACCIDENT RISK ANALYSIS

He, Zhichao (Hong Kong, China)¹; Weng, Wenguo (China)²

1 - The Hong Kong Polytechnic University; 2 - Tsinghua University

Pires Ferreira, Rodrigo José OC - (26481) - DECISION SUPPORT MODEL FOR CLIMATE RISK MANAGEMENT: A CASE STUDY IN A BRAZILIAN CITY

Pires Ferreira, Rodrigo José (Brazil)¹; Hazin Alencar, Marcelo (Brazil)¹; Borges Leal Da Silva, Lucas (Brazil)¹; Teixeira De Almeida, Adiel (Brazil)¹

1 - Federal University of Pernambuco

Kilskar, Stine Skaufel OC - (26538) - BARRIER MANAGEMENT IN CONSTRUCTION PROJECTS

Albrechtsen, Eirik (Norway)¹; Kilskar, Stine Skaufel (Norway)^{1,2}; Winge, Stig (Norway)²

1 - Norwegian University of Science and Technology; 2 - SINTEF AS

Prof. Dr. Krini, Abderrahim OC - (27920) - A SYSTEM-LEVEL FUNCTIONAL SAFETY ARCHITECTURE FOR INDUSTRIAL HIGH-VOLTAGE DC NETWORKS BEYOND 800 V

Prof. Dr. Krini, Abderrahim (Germany)¹; Schalk, Lars (Germany)¹

1 - Technische Hochschule Ostwestfalen-Lippe, Chair of Applied Electronics and Functional Safety

Locherer, Mark OC - (28974) - ARGUING SAFETY FOR AI-DRIVEN SYSTEMS

Locherer, Mark (Germany)^{1,2}; Kordovan, Michael (Germany)³; Buxbaum, Bernd (Germany)^{2,3}; Kever, Thorsten (Germany)¹

1 - DHBW Ravensburg; 2 - University of Siegen; 3 - ifm electronic gmbh

Session: MA8 – Organizational Factors and Safety Culture **Meeting room 8 - Level -1**

Chairs

Trond Kongsvik

Speaker

Ross, Luise OC - (26295) - IT TAKES A TEAM: PSYCHOLOGICAL SAFETY AND COHESION AS CATALYSTS OF SAFETY BEHAVIOR IN THE RAILWAY SECTOR

Ross, Luise (Germany)¹; Mühl, Kristin (Germany)¹

1 - German Centre for Rail Traffic Research

Størkersen, Kristine OC - (26461) - UNFINISHED ORCHESTRAS - SAFETY IN FRAGMENTED TOWING AND PASSENGER VESSEL OPERATIONS

Holen, Siri (Norway)¹; Slette, Hans Tobias (Norway)¹; Størkersen, Kristine (Norway)¹; Thorvaldsen, Trine (Norway)¹

1 - Department of Aquaculture, SINTEF Ocean, Norway

Finnestrand, Hanne OC - (27703) - THE UNSPOKEN THEORY: HOW 'SOCIO-TECHNICAL SYSTEMS' ARE USED WITHOUT BEING THEORIZED IN SAFETY RESEARCH

Wahl, Aud (Norway)¹; Finnestrand, Hanne (Norway)¹

1 - NTNU

Mikkelsplass, Stine Aurora OC - (27861) - HUMAN-CENTRED CYBERSECURITY TRAINING FOR SMES

Mikkelsplass, Stine Aurora (Norway)¹; Nystad, Espen (Norway)¹; Jørgensen, Per-Arne (Norway)¹

1 - Institute for Energy Technology

Gnoni, Maria Grazia OC - (26502) - DIGITAL TECHNOLOGIES APPLIED FOR SUPPORTING OSH MANAGEMENT: A STATE OF THE ART FOR AUTOMATIC SURVEILLANCE AND DIGITAL ASSISTANT SYSTEMS

Agnello, Patrizia (Italy)²; Andriulo, Serena (Italy)¹; Gnoni, Maria Grazia (Italy)¹; Menci, Marta (Italy)³; Setola, Roberto (Italy)³

1 - University of salento; 2 - Inail; 3 - Campus Biomedico

SS-20: Advances in Strategic and Operational Risk Assessment for Maritime Traffic **Meeting room 9 - Level -1**

Chairs

Jakub Montewka

Yigit C. Altan

Speaker

Altan, Yigit C. SS - (27769) - PREDICTING EVASIVE MANEUVERS IN COMPLEX WATERWAYS: A SPATIO-TEMPORAL GRAPH CONVOLUTIONAL APPROACH USING AIS DATA

Altan, Yigit C. (Turkey)¹; Adali, Berk (Turkey)¹

1 - Ozyegin University, Turkey

Altan, Yigit C. SS - (27771) - THE COLLISION POTENTIAL INDEX (CPI): QUANTIFYING DYNAMIC ENCOUNTER RISK AND MAPPING HUMAN-CENTRIC HOTSPOTS IN THE STRAIT OF ISTANBUL

Altan, Yigit C. (Turkey)¹; Besiktas, Ceren (Turkey)¹; Buyukkivanc, Kaan (Turkey)¹; Adali, Berk (Turkey)¹; Kazimierska, Olga (Poland)²; Gil, Mateusz (Poland)³; Krata, Przemysław (Poland)²; Montewka, Jakub (Poland)²

1 - Ozyegin University, Turkey; 2 - Gdańsk University of Technology, Poland; 3 - Gdynia Maritime University, Poland

Wang, Xinjian SS - (27786) - A TOPSIS-BASED REGRESSION FUSION MODEL FOR TIME PREDICTION IN MARITIME EVACUATION

Wang, Xinjian (China)¹; Cui, Zekai (China)¹; Cao, Yuhao (United Kingdom)²; Yang, Zaili (United Kingdom)²

1 - Dalian Maritime University; 2 - Liverpool John Moores University

Cademartori, Marcello (Genova) SS - (27924) - INNOVATIVE FRAMEWORK FOR SHIP IMPACT RISK ASSESSMENT ON PORT INFRASTRUCTURE

Cademartori, Marcello (Italy)¹; Osmani, Saimir (Italy)¹; Attanasio, Cristina (Italy)¹; Chiecchio, Angela (Italy)¹; De Maio, Florencia Victoria (Italy)¹; Massone, Eleonora (Italy)¹; Rizzo, Cristiano (Italy)¹; Tavaroli, Fabrizio (Italy)¹; Basso, Paolo (Italy)¹

1 - RINA Consulting S.p.A.

Yaseen, Aqsa SS - (29031) - A SYSTEMATIC LITERATURE REVIEW: COLLISION AVOIDANCE METHODS FOR AUTONOMOUS VESSELS

Yaseen, Aqsa (Estonia)¹; Kujala, Pentti (Estonia)¹; Janson, Karl (Estonia)¹

1 - Estonian Maritime Academy, Tallinn University of Technology, Tallinn, Estonia

Gutkowski, Mateusz SS - (26457) - TOWARDS A RISK INDEX FOR WINTER NAVIGATION, A CASE STUDY FOR THE BALTIC SEA

Życzkowski, Marcin (Poland)¹; Zarzycki, Filip (Portugal)¹; Chodnicki, Paweł (Portugal)¹; Gajgał, Fabian (Portugal)¹; Gutkowski, Mateusz (Poland)¹; Sarnowski, Piotr (Portugal)¹; Grabowicz, Tomasz (Portugal)¹; Laine, Valtteri (Portugal)²; Lu, Liangliang (Portugal)³; Montewka, Jakub (Portugal)¹

1 - Gdańsk University of Technology, Poland; 2 - The Finnish Transport and Communications Agency Traficom; 3 - Aalto University

Życzkowski, Marcin SS - (29048) - RISK-INFORMED EVALUATION OF BALTIC SEAWINTER NAVIGABILITY USING MACHINE LEARNING

Montewka, Jakub (Poland)¹; Chodnicki, Paweł (Poland)¹; Zarzycki, Filip (Poland)²; Życzkowski, Marcin (Poland)³; Gajgał, Fabian (Poland)²; Gutkowski, Mateusz (Poland)²; Sarnowski, Piotr (Poland)²; Grabowicz, Tomasz (Poland)²; Lu, Liangliang (Finland)⁴

1 - Gdańsk University of Technology/ Waterborne Transport Innovation; 2 - Gdansk University of Technology; 3 - marcin.zyczkowski@pg.edu.pl; 4 - Aalto University

Jenny Rocio Rios Martinez

Speaker

Pereira, Jose SS - (26174) - THE APPLICATION OF RESILIENCE ENGINEERING IN AVIATION MRO: A SYSTEMATIC LITERATURE REVIEW AND CONCEPTUAL SYNTHESIS

Pereira, Jose (Brazil)¹; Esperança, Fabio (Brazil)¹; Frade, Flavio (Brazil)¹; Almeida, Flavio (Brazil)¹; Andrade, Francisco (Brazil)²

1 - Universidade Catolica Petropolis; 2 - ITE Recreio Instituto de Tecnologia e Ensino

Lickert, Benjamin SS - (26263) - MODELING SOCIETAL CONSEQUENCES OF DAMAGE CASCADES IN CRITICAL INFRASTRUCTURES TO QUANTIFY BENEFITS OF NATURE-BASED SOLUTIONS

Lickert, Benjamin (Germany)¹; Fehling-Kaschek, Mirjam (Germany)¹; Häring, Ivo (Germany)¹; Stolz, Alexander (Germany)¹

1 - Fraunhofer Ernst-Mach-Institute, EMI

Rios Martinez, Jenny Rocio SS - (26572) - A MULTI-CRITERIA FRAMEWORK FOR RESILIENCE ASSESSMENT: APPLICATION TO CYBER THREATS TO CRITICAL INFRASTRUCTURES

Rios Martinez, Jenny Rocio (Switzerland)¹; Podifillini, Luca (Switzerland)²; Spada, Matteo (Switzerland)¹

1 - Institute of Sustainable Development (INE), School of Engineering (SoE), Zurich University of Applied Sciences (ZHAW), Winterthur, Switzerland; 2 - PSI Centers for Nuclear Engineering and Science and for Energy and Environmental Sciences, Laboratory for Energy Systems Analysis, Paul Scherrer Institute, Villigen PSI, Switzerland

Araújo, Emília SS - (27789) - PRELIMINARY INDICATORS FOR SOCIAL AND HUMAN RESILIENCE: AN EXPLORATORY APPROACH FOR INFRASTRUCTURE SAFETY

Araújo, Emília (Portugal)¹

1 - University of Minho

15:30

16:00 **Coffee break** [Forum Braga Foyer - Level 0](#)

16:00

17:30 **Parallel Sessions**

Session: MA7 – Simulation for Safety and Reliability Analysis [Grand Auditorium - Level 0](#)

Chairs

Roberto Rocchetta

Curtis L Smith

Speaker

Ribeiro, Guilherme OC - (27626) - A MULTIDIMENSIONAL SAFETY ANALYSIS OF SIGNALS PASSED AT DANGER (SPADS) IN THE PORTUGUESE RAILWAY SYSTEM

Ribeiro, Guilherme (Portugal)¹; Grilo, Miguel I. (Portugal)¹; Neves, Gonçalo F. (Portugal)¹; Infante,

Virgínia (Portugal)¹; Andrade, António R. (Portugal)¹

1 - Instituto de Engenharia Mecânica - IDMEC

Mrugala, Grzegorz OC - (24042) - TOWARDS SAFETY OF ADVANCED NUCLEAR REACTORS WITH RELIABILITY-CENTERED DESIGN OF ELECTRICAL SYSTEMS IN HTGR-POLA

Mrugala, Grzegorz (Poland)^{1,2}; Jartych, Elżbieta (Poland)²

1 - National Centre for Nuclear Research (NCBJ); 2 - Lublin University of Technology

Vryashkova, Petya OC - (26103) - UNCERTAINTY EVALUATION FOR A POSTULATED SEVERE ACCIDENT SCENARIO AT A VVER1000 NPP USING ASTEC-SUNSET

Petrova, Petya (Bulgaria)¹; Vryashkova, Petya (Bulgaria)¹; Groudev, Pavlin (Bulgaria)¹

1 - Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, (INRNE-BAS)

Stefanova, Antoaneta OC - (26111) - STUDY OF OPERATOR ACTIONS IN THE EVENT OF FAILURE TO CLOSE THE BRU-A IN THE EVENT OF A LARGE NUMBER OF SG TUBE RUPTURES

Stefanova, Antoaneta (Bulgaria)¹; Vryashkova, Petya (Bulgaria)¹; Georgiev, Valentin (Bulgaria)¹; Petkov, Gueorgui (Bulgaria)²; Groudev, Pavlin (Bulgaria)¹

1 - Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences (INRNE-BAS); 2 - Atomic Physics Department, Sofia University St. Kliment Ohridski

Smith, Curtis OC - (26113) - GENERATION RISK ASSESSMENT: SYSTEM DESIGN, ECONOMIC IMPACTS AND IMPORTANCE MEASURES

Smith, Curtis (United States of America)¹; Borgonovo, Emanuele (Italy)¹

1 - Massachusetts Institute of Technology

Frischknecht-Gruber, Carmen Mei-Ling OC - (26154) - BAAS: BENCHMARKING ADVERSARIAL AGENT STRATEGIES – A COMPARATIVE STUDY OF GRADIENT-BASED, REINFORCEMENT, AND EVOLUTIONARY PARADIGMS FOR SAFETY-CRITICAL SCENARIO GENERATION

Frischknecht-Gruber, Carmen Mei-Ling (Switzerland)¹; Prof. Dr. Reif, Monika (Switzerland)¹; Prof. Dr. Fischer, Andreas (Switzerland)²

1 - ZHAW Zurich University of Applied Sciences; 2 - Université de Fribourg

Ameen, Horia (Vigo) OC - (26202) - UNCERTAINTY AND SENSITIVITY ANALYSIS OF THE IRAP ROAD SAFETY RISK ASSESSMENT MODEL FOR VEHICLES

Ameen, Horia (Spain)¹; Ghasemlou, Arshia (Spain)¹; Soilán, Mario (Spain)¹; Riveiro, Belen (Spain)¹

1 - CINTECX, GeoTECH group, Universidade de Vigo

Lim, Stanley Suan You OC - (26220) - DYNAMIC FAULT TREE CONSTRUCTION THROUGH MINIMAL CUT SEQUENCES AND CAUSAL DISCOVERY ALGORITHM

Lim, Stanley Suan You (France)¹; Gascard, Eric (France)¹

1 - G-SCOP

Finger, Jörg OC - (26299) - TOWARDS A TOOL FOR ASSESSING FREQUENCY STABILITY IN ISLANDED DISTRIBUTION GRIDS, BASED ON A NEWLY DEVELOPED PYTHON RMS SIMULATION PROGRAM BUILT ON THE PANDAPOWER FRAMEWORK

Ganter, Sebastian (Germany)³; Finger, Jörg (Germany)¹; Della Croce, Giacomo (Italy)²; Häring, Ivo (Germany)³; Stolz, Alexander (Germany)³

1 - Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI, Freiburg, Germany; 2 - DIGITALPLATFORMS S.P.A. (SELTA-DP); 3 - Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI, Efringen-Kirchen, Germany

Norisk Workshop **Small Auditorium - Level 1**

16:00

17:40 Pitch sessions Round 2

Speaker

Wind-Induced Risk Assessment of Industrial Structures under Climate Change - Mark Njiri

Multi-storey buildings seismic risk assessment - Sharmistha Shrestha

Climate-change driven implications on detailing rules in RC structures - Emmanuel Tassy-Amuda

Advanced Monitoring and Assessment of Existing Bridges - Damaris Jurado

Development of typological seismic fragility curves for chemical industrial installations - Avinash Nmg

Bayesian updating of bridge structural reliability using monitoring data, stop criteria, and proof load testing - Neguse Mekonnen

Uncertainty-Aware Risk Screening from Imperfect BIM Using N8N with IFC Validation, QTO Robustness, and Explainable Risk Registers - Aulia Annisa Rahmatillah

Risk-Based Framework for Lifecycle Decision-Making Using Data-Centric Digital Twins - Barbu Vladut-Adrian

Risk-Informed Reliability of Digital Twins with Physics-Guided AI - Quỳnh Trang Phạm

Knowledge and Data-Centric Transitions for Construction and Infrastructure Risk Management - Zlata Tumanova

Adaptive Reinforcement-Learning RAG Agents for Real-Time Risk and Reliability Evaluation in Bridge Structural Health Monitoring - Yafatou Sanneh

Enhancing Railway Bridge Inspection and Condition Assessment using Scan-to-BIM and Deep Learning - Chibuike Henry Azubuike

17:25

17:40 Discussion

17:40

17:50 Concluding remarks and student awards

Speaker

Hélder S. Sousa

Session: MA10 – Resilience Engineering **Congress Room 1 - Level 1**

Chairs

Eric Rigaud

Torgeir Kolstø Haavik

Speaker

Rigaud, Eric OC - (26236) - PROPOSAL FOR AN INTEGRATED GMA-STAMP FORESIGHT METHOD TO DEVELOP EBIOS RM SCENARIOS FOR ANTICIPATING CYBERSECURITY RISKS IN THE MARITIME SECTOR
Rigaud, Eric (France)¹; Napoli, Aldo (France)¹; Larouzee, Justin (France)¹; Iphar, Clement (France)¹; Cue Gonzalez, Alejandra (France)¹
1 - MINES PARIS

Haavik, Torgeir Kolstø OC - (29022) - NETWORKED RESILIENCE – LIVING WITH UNORGANISABLE UNCERTAINTY
Haavik, Torgeir Kolstø (Norway)¹; Herrera, Ivonne (Norway)¹; Kongsvik, Trond (Norway)²; Schiefloe, Per Morten (Norway)¹; F. Rayo, Michael (United States of America)³; D. Woods, David (United States of America)³
1 - Studio Apertura, NTNU Social Research, Norway; 2 - Dept of Ind. Economics and Techn Management, NTNU, Norway; 3 - The Ohio State University, Columbus, OH, United States

Li, Meiyang OC - (26190) - JOINT PRE- AND POST-DISASTER RESOURCE ALLOCATION FOR RESILIENCE IMPROVEMENT IN COMPUTING POWER NETWORK
Li, Meiyang (China)¹; Wu, Bei (China)¹; Zhang, Congnan (China)¹; Chen, Zhiwei (China)²
1 - School of Management, Northwestern Polytechnical University; 2 - Unmanned System Research Institute, Northwestern Polytechnical University

Eric, Rigaud OC - (26207) - GENERAL MORPHOLOGICAL ANALYSIS FOR LONG-TERM CRITICAL INFRASTRUCTURE RESILIENCE: A SCENARIO-BASED FRAMEWORK
Eric, Rigaud (France)¹; Cue Gonzalez, Alejandra (France)¹
1 - MINES PARIS

Lašas, Karolis OC - (26285) - APPLICATION OF PROBABILITY AND TOPOLOGICAL METRICS FOR RESILIENCE ASSESSMENT OF DISTRICT HEATING NETWORKS
Lašas, Karolis (Lithuania)¹; Rimkevičius, Sigitas (Lithuania)¹
1 - Lithuanian Energy Institute

Nguyen, Hoa Thi OC - (26301) - HOW WELL DO AUTOMATICALLY EVOLVED NEURONS PERFORM? A COMPARATIVE STUDY IN HUMAN ACTIVITY RECOGNITION
Tran, Chau Thi Thuy (Norway)¹; Nguyen, Hoa Thi (Norway)¹; Magnusson, Lars Vidar (Norway)²; Olsson, Roland (Norway)²
1 - Institute for Energy Technology; 2 - Østfold University College

Petrenj, Boris OC - (26312) - TOWARD ADAPTIVE GOVERNANCE FOR CRITICAL INFRASTRUCTURE RESILIENCE: A DAO-ENABLED FRAMEWORK FOR COLLABORATIVE CRISIS MANAGEMENT
Petrenj, Boris (Italy)¹; Mukhanova, Saniya (Italy)¹; Trucco, Paolo (Italy)¹
 1 - Politecnico di Milano

Victoria De Maio, Florencia (Genova) OC - (27899) - FROM RESEARCH TO APPLICATION: THE EVOLUTION OF THE CREMA TOOL ACROSS MULTICLIMACT AND MED-IREN PROJECTS FOR ADVANCING CLIMATE RESILIENCE IN EUROPE.
 Attanasio, Cristina (Italy)¹; Verga, Arianna (Italy)¹; Solari, Celina (Italy)¹; Fuggini, Clemente (Italy)¹; Osmani, Saimir (Italy)¹; Valsecchi, Ruben (Italy)¹; Victoria De Maio, Florencia (Italy)¹
 1 - Rina Consulting S.p.a., Italy

Demmer, Tobias OC - (26214) - RESILIENCE PERFORMANCE MODELLING USING PT DELAY ELEMENTS
Demmer, Tobias (Germany)¹; Lichte, Daniel (Germany)¹; Wolf, Kai-Dietrich (Germany)²
 1 - DLR; 2 - University of Wuppertal

SS-31: Balancing Resources under Uncertainty – Weighing Safety, Security and Resilience Requirement Congress Room 2 - Level 1

Chairs

Kai-Dietrich Wolf

Daniel Lichte*

Speaker

Priesmeier, Peter SS - (27625) - SAFETY, SECURITY AND RESILIENCE - CAN YOU HAVE ONE WITHOUT THE OTHER?
 Demmer, Tobias (Portugal)¹; Priesmeier, Peter (Portugal)¹
 1 - DLR

Lichte, Daniel SS - (26611) - MODELING NON-LINEAR DAMAGE PROGRESSION IN CRITICAL INFRASTRUCTURE FAILURES UNDER UNCERTAINTY
Lichte, Daniel (Portugal)¹; Halekotte, Lukas (Portugal)¹
 1 - German Aerospace Center – Institute for the Protection of Terrestrial Infrastructures, Germany

Termin, Thomas SS - (26292) - ON BENCHMARKING MODIFIED METRICS IN SECURITY RISK ASSESSMENT
Termin, Thomas (Germany)¹; Witte, Dustin (Germany)¹; Lichte, Daniel (Germany)²; Wolf, Kai-Dietrich (Germany)¹
 1 - Institute for Security Systems (ISS), University of Wuppertal; 2 - German Aerospace Center (DLR), Institute for the Protection of Terrestrial Infrastructures

Wolf, Kai-Dietrich SS - (27615) - BALANCING SAFETY AND SECURITY UNDER UNCERTAINTY – A STRUCTURED APPROACH FOR CROSS-DOMAIN RISK ASSESSMENT

Wolf, Kai-Dietrich (Portugal)¹; Lichte, Daniel (Portugal)²; Termin, Thomas (Portugal)¹
1 - University of Wuppertal, Germany; 2 - German Aerospace Center – Institute for the Protection of Terrestrial Infrastructures, Germany

Witte, Dustin SS - (27684) - TOWARDS HARMONIZING MODELS AND METRICS IN PHYSICAL SECURITY AND CYBERSECURITY RISK ASSESSMENT: AN APPROACH FOR CROSS-DOMAIN RISK ALIGNMENT
Witte, Dustin (Germany)¹; Termin, Thomas (Germany)¹; Lichte, Daniel (Germany)²; Wolf, Kai-Dietrich (Germany)¹
1 - University of Wuppertal, Institute for Security Systems; 2 - German Aerospace Center (DLR), Institute for the Protection of Terrestrial Infrastructures

Sill Torres, Frank SS - (27870) - HANDLING UNCERTAINTY IN MARITIME INCIDENT ASSESSMENT: AN APPROACH TO SAFETY–SECURITY CLASSIFICATION
Sill Torres, Frank (Germany)¹; Münch, Babette (Germany)¹; Stockbrügger, Jan (Germany)¹
1 - German Aerospace Center (DLR), Institute for the Protection of Maritime Infrastructures

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Elena Zaitseva

Vitaly Levashenko

Speaker

Du, Shijia OC - (26577) - A STOCHASTIC HYBRID SYSTEMS FRAMEWORK FOR PROBABILISTIC DIGITAL FAILURE TWIN MODELING CONSIDERING MULTIPLE DEPENDENT FAILURE PROCESSES
Du, Shijia (France)¹; Xing, Liudong (United States of America)²; Zeng, Zhiguo (France)¹
1 - Centralesupélec Université paris-saclay; 2 - University of Massachusetts

Liebenberg, Shawn OC - (27656) - A CONCEPTUAL MODEL FOR CHARACTERIZING HUMAN AND ASSET RISK FROM UNCONTROLLED GAS RELEASES
Nel, Gert (South Africa)¹; Coetzer, Roelof (South Africa)¹; Koekemoer, Ockert (South Africa)¹; Liebenberg, Shawn (South Africa)¹
1 - North-West University

Liebenberg, Shawn OC - (27727) - DATA-DRIVEN MULTIVARIATE MONITORING OF GAS WELL INTEGRITY
Liebenberg, Shawn (South Africa)¹; Coetzer, Roelof (South Africa)¹; Koekemoer, Ockert (South Africa)¹; Nel, Gert (South Africa)¹
1 - North-West University

Zhang, Shuai OC - (27812) - A RELIABILITY EVALUATION METHOD FOR BINARY-NODE MULTI-STATE NETWORKS CONSIDERING NODE–EDGE STATE DEPENDENCE
Zhang, Shuai (China)¹; Bai, Guanghan (China)¹; Jiajing, Wu (China)²; Tao, Junyong (China)¹; Wang, Yang

(China)¹

1 - National University of Defense Technology; 2 - School of Software Engineering, Sun Yat-sen University

Kühn, Lisa OC - (27813) - REDUCED-ORDER MODELING FOR THE PREDICTION OF CONTAMINANT DISPERSION IN URBAN AREAS

Kühn, Lisa (Germany)¹; Bonari, Jacopo (Germany)¹; Von Danwitz, Max (Germany)¹; Popp, Alexander (Germany)^{1,2}

1 - Institute for the Protection of Terrestrial Infrastructures, German Aerospace Center (DLR), Germany.; 2 - Institute for Mathematics and Computer-Based Simulation, University of the Bundeswehr Munich, Germany.

Osicka, Ondrej OC - (27816) - PFD CALCULATION METHOD FOR SYSTEMS WITH HIGH FAILURE RATES, LONG TEST INTERVALS, AND MANY COMPONENTS

Osicka, Ondrej (Norway)¹; Aarø, Ragnar (Norway)¹; Kortner, Henrik K. (Norway)¹; Onshus, Tor (Norway)²

1 - TÜV Rheinland Safetec; 2 - Department of Engineering Cybernetics, Norwegian University of Science and Technology

Tolo, Silvia OC - (26155) - CULLING METHODS FOR MINIMAL CUT SETS INCLUDING DEPENDENCIES

Tolo, Silvia (United Kingdom)¹; Andrews, John (United Kingdom)¹

1 - University of Nottingham

SS-15: Reliability, Risk and Resilience of Cyber-Physical Systems **Congress Room 4 - Level 1**

Chairs

Yiping Fang

Francesco Di Maio

Speaker

Petrenj, Boris SS - (26307) - INCORPORATING UNCERTAINTY INTO THE RESILIENCE ANALYSIS OF INTERDEPENDENT CRITICAL INFRASTRUCTURE: A SYSTEM-LEVEL ROBUSTNESS ANALYSIS

Trucco, Paolo (Italy)¹; Tomasini, Giulio (Italy)¹; Petrenj, Boris (Italy)¹

1 - Politecnico di Milano

Cao, Yuhao SS - (26142) - RESILIENCE-DRIVEN OPTIMISATION FOR CASCADING DISRUPTION ADAPTATION ACROSS THE EUROPEAN CONTAINER SHIPPING NETWORK

Cao, Yuhao (United Kingdom)¹; Xin, Xuri (United Kingdom)¹; Wang, Xinjian (China)²; Wang, Jin (United Kingdom)¹; Yang, Zaili (United Kingdom)¹

1 - Liverpool John Moores University; 2 - Dalian Maritime University

Qin, Xiangyu SS - (26192) - STOCHASTIC RESOURCE ALLOCATION OPTIMIZATION FOR SYSTEM RESILIENCE ENHANCEMENT INCORPORATING COMPONENT IMPORTANCE MEASURE

Qin, Xiangyu (China)¹; Wu, Bei (China)¹; Che, Ada (China)¹

1 - Northwestern Polytechnical University

Wang, Kai SS - (26218) - DISTRIBUTED POST-DISASTER RESTORATION OF INTERDEPENDENT INFRASTRUCTURE NETWORKS UNDER SPATIALLY CORRELATED REGIONAL HAZARDS

Wang, Kai (France)¹; Fang, Yiping (France)¹

1 - Laboratoire Génie Industriel (LGI), CentraleSupélec, Université Paris-Saclay, France

Fidelibus, Nicolò SS - (26270) - RISK ASSESSMENT TO FLOODS OF SOCIO-ECONOMIC NETWORKS AT URBAN SCALE: RESILIENCE AND ADAPTATION ACROSS EUROPEAN CITIES.

Fidelibus, Nicolò (Italy)¹; Arosio, Marcello (Italy)¹; Starnini, Michele (Italy)²

1 - IUSS Pavia; 2 - UPF Barcelona

Sammartino, Vincenzo SS - (27756) - QUANTIFYING RESILIENCE OF CYBER-PHYSICAL SYSTEMS TO ZERO-DAY THREATS: A DIGITAL TWIN-BASED WHAT-IF ANALYSIS

Sammartino, Vincenzo (Portugal)¹; Baiardi, Fabrizio (Portugal)¹

1 - Università di Pisa

SS-10: Development and Application of Methods for Enhancing the Reliability of Power Electronics Devices

Congress Room 5 - Level 1

Chairs

Piero Baraldi

Enrico Zio

Speaker

Bias Macedo, July SS - (27788) - LATENT RISK PATTERN DISCOVERY IN HYDROGEN INCIDENTS VIA RETRIEVAL-AUGMENTED GENERATION

Alencar Santana, Lucas (Brazil)¹; Bias Macedo, July (Brazil)¹; Souto Maior, Caio (Brazil)¹; Das Chagas Moura, Marcio (Brazil)¹; Didier Lins, Isis (Brazil)¹

1 - UFPE/CEERMA

Martino, Edoardo SS - (26322) - RELIABILITY AND QUALITY ASSURANCE METHODS FOR POWER ELECTRONICS CONVERTERS

Martino, Edoardo (Portugal)¹; Akbar, Arooj (Portugal)¹; Shen, Hua (Portugal)¹; Denysenko, Vadym (Portugal)¹; Maillet-Gonzalez, Adrien (Portugal)^{1,2}; Radon, Lucas (Portugal)^{1,3}; Riedel, Gernot J. (Portugal)⁴; Schuderer, Jürgen (Portugal)⁴

1 - Hitachi Energy Research, 5404 Baden -Dättwil, Switzerland; 2 - École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland; 3 - Institute for Power Electronics and Electrical Drives (ISEA), RWTH Aachen University, 52074 Aachen, Germany; 4 - Hitachi Energy Ltd Switzerland, 5300 Turgi, Switzerland

Bertone, Matteo SS - (28977) - DEVELOPMENT OF A SENSOR DENSITY REDUCTION METHODOLOGY FOR THERMAL MONITORING OF ELECTRONIC SYSTEMS <u>Bertone, Matteo</u> (Italy)¹; Castorina, Giorgia (Italy)¹; Maggiore, Paolo (Italy)¹; Dalla Vedova, Matteo Davide Lorenzo (Italy)¹ 1 - Politecnico di Torino
Sakhare, Hiteshree Suresh SS - (29173) - PROBABILISTIC PROGNOSTICS FOR POWER ELECTRONIC DEVICES: A COMPARATIVE STUDY OF MONTE CARLO AND LATIN HYPERCUBE SAMPLING FOR UNCERTAINTY-AWARE RUL ESTIMATION AND COST-OPTIMAL MAINTENANCE <u>Sakhare, Hiteshree Suresh</u> (India)¹; Gargama, Heeralal (India)¹ 1 - SUBIR CHOWDHURY SCHOOL OF QUALITY AND RELIABILITY, IIT KHARAGPUR
Baraldi, Piero SS - (30436) - ASSESSMENT OF THE DEGRADATION OF IGBTs USED IN WIND TURBINE POWER CONVERTERS BY A METHOD BASED ON PHYSICS-INFORMED TRANSFORMERS Lai, Chenyang (Italy)¹; <u>Baraldi, Piero</u> (Italy)¹; Zinchenko, Oleksii (United Kingdom)²; Zhang, Xu (United Kingdom)²; Zio, Enrico (Italy)^{3,4} 1 - Department of Energy, Polytechnic University of Milan, Ital; 2 - School of Engineering, University of Warwick, UK; 3 - Department of Energy, Polytechnic University of Milan, Italy; 4 - MINES Paris-PSL, CRC, Sophia Antipolis, France

SS-08: Generative AI For Predictive Maintenance **Meeting room 6 - Level -1**

Chairs

Yang Hu

Speaker

Verdinelli, Fabio SS - (24045) - ENHANCING AUTOMATED WARRANTY REPAIR REPORTS ANALYSIS WITH LLM GENERATIVE TECHNOLOGIES

Verdinelli, Fabio (Italy)¹; Thomas, Mathew (United States of America)¹

1 - CNH

Hu, Yang SS - (26166) - A MULTI-TASK-DRIVEN FRAMEWORK FOR DETECTION AND DIAGNOSTICS OF GENERAL AIRCRAFT

Chen, Xinhang (China)¹; Wei, Zhihuan (China)¹; Baraldi, Piero (Italy)²; Hu, Yang (China)¹

1 - Hangzhou International Innovation Institute of Beihang University, Hangzhou, China; 2 - Politecnico di Milano

Andolfi, Alice SS - (30437) - DATA AUGMENTATION BY GENERATIVE ADVERSARIAL NETWORKS FOR FAULT DETECTION IN POWER PRODUCTION SYSTEM

Andolfi, Alice (Italy)¹; Baraldi, Piero (Italy)¹; Floreale, Giovanni (Italy)¹; Zio, Enrico (Italy)^{1,2}

1 - Department of Energy, Politecnico di Milano, Milan, Italy; 2 - MINES Paris-PSL, Centre de Recherche sur les Risques et les Crises (CRC), Sophia Antipolis, France

Session: MA15 – System Reliability Applications **Meeting room 7 - Level -1**

Chairs

Nicolae Brînzei

Edoardo Patelli

Speaker

Deng, Wujin OC - (26130) - CROSS-ATTENTION-ENHANCED MULTI-BRANCH NEURAL NETWORKS FOR THE BURN-IN TESTS REDUCTION OF THE SEMICONDUCTOR INDUSTRY

Deng, Wujin (China)¹; Zio, Enrico (Italy)¹

1 - Department of Energy, Politecnico di Milano

Mas, Victor Leon OC - (26217) - TOWARDS RELIABILITY ANALYSIS: EXPERIMENTAL ACQUISITION OF ANGLE GRINDER LOAD PROFILES CONSIDERING TOOL WEAR AND WORKPIECE MATERIAL EFFECTS

Mas, Victor Leon (Germany)¹; Kleinhans, Lukas (Germany)¹; Matthiesen, Sven (Germany)¹

1 - Karlsruhe Institute of Technology, Institute of Product Engineering

Bashary, Walaa OC - (26520) - ON COMPOUND HAZARDS IN COST-EFFECTIVE RECOVERY MANAGEMENT

Bashary, Walaa (Germany)¹; Halekotte, Lukas (Germany)¹; Mentges, Andrea (Germany)¹; Lichte, Daniel (Germany)¹

1 - German Aerospace Center (DLR)

Colombo, Danilo OC - (27736) - A COMPARATIVE MULTIVARIATE RELIABILITY ANALYSIS APPROACHES ACCELERATED FAILURE TIME (AFT) AND COX PH REGRESSION: CASE IN OIL GAS WELL

Colombo, Danilo (Brazil)²; Severino Abrego, Andre Luís (Brazil)²; Santiago Figueiroa Filho, Celso Luiz (Brazil)¹; Machado De Assis, Edilson (Brazil)³

1 - G-RAMS Inovação; 2 - Reliability Department, Petrobras-CENPES; 3 - Reliability researcher, G-RAMS Inovação

Tan, Yunlei OC - (28981) - TIME-CENSORED TEST PLAN DESIGN AND RISK ANALYSIS BASED ON TWO-LEVEL 'COMPONENT-SYSTEM' COLLABORATION

Tan, Yunlei (China)¹; Zhang, Dian (China)¹; Jiang, Ping (China)¹; Xing, Yunyan (China)¹; Ju, Lunhao (China)¹

1 - College of Systems Engineering, National University of Defense Technology, Changsha, China

SS-30: Risk and Reliability Analysis in Hydrogen Systems **Meeting room 8 - Level -1**

Chairs

Stefano Marchetti

Caio Souto Maior

Speaker

Piazzzi, Anna SS - (26500) - BENCHMARKING OF NOVEL INSULATION CONCEPTS FOR LIQUID HYDROGEN STORAGE TANKS

Piazzzi, Anna (Norway)¹; De Fazio, Ivan (Norway)¹; Ustolin, Federico (Norway)¹

1 - Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, Trondheim, 7034, Norway

Pereira, Sandrely (Recife, Brazil.) SS - (27704) - RELIABILITY EVALUATION OF GREEN HYDROGEN SYSTEMS INTEGRATED WITH PHOTOVOLTAIC ENERGY: AN APPROACH FOR DATA-LIMITED ENVIRONMENTS

Andrade Santos, Leonardo (Brazil)¹; Souto Maior, Caio (Brazil)¹; Moura Chagas, Marcio (Brazil)¹;

Pereira, Sandrely (Brazil)¹

1 - Universidade Federal de Pernambuco, Brazil

Pereira Da Silva, Sandrely (Recife, Brazil.) SS - (27721) - EXPLORING DATA-DRIVEN SOLUTIONS TO PREDICT HYDROGEN SOLUBILITY IN SALINE ENVIRONMENTS FOR UNDERGROUND HYDROGEN STORAGE

Pereira Da Silva, Sandrely (Brazil)¹; Bezerra Souto Maior, Caio (Brazil)¹; Didier Lins, Isis (Brazil)¹

1 - Federal University of Pernambuco, Brazil

Stewart, Theresa SS - (27791) - DEVELOPMENT OF A MODEL AND GUIDELINES FOR BALANCING PIPELINE SAFETY AND EFFICIENCY WITH HYDROGEN BLENDING

Stewart, Theresa (United States of America)^{1,2}; Ayello, Francois (United States of America)³; Mosleh, Ali (United States of America)^{1,2}

1 - University of California Los Angeles; 2 - B. John Garrick Institute for the Risk Sciences; 3 - DNV

Mosleh, Suroosh SS - (27793) - INTEGRATION OF DYNAMIC PROBABILISTIC RISK ASSESSMENT AND DECISION MAKING UNDER UNCERTAINTY METHODOLOGY FOR HYDROGEN FUELING STATION DEPLOYMENT

Mosleh, Suroosh (United States of America)¹; Groth, Katrina (United States of America)¹

1 - University of Maryland, United States of America

De Fazio, Ivan SS - (27794) - STORM-INDUCED NATECH VULNERABILITY OF SAFETY BARRIERS IN LARGE-SCALE LIQUID HYDROGEN STORAGE SYSTEMS

De Fazio, Ivan (Norway)¹; Tzioutzios, Dimitrios (Norway)¹; Ustolin, Federico (Norway)¹; Paltrinieri, Nicola (Norway)¹

1 - Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, Norway

Alipour Bonab, Shahin SS - (27872) - THEORY-GUIDED DATA-DRIVEN PREDICTION OF PEMEC DEGRADATION AND DURABILITY FOR RELIABLE GREEN HYDROGEN PRODUCTION

Waite, Thomas (United Kingdom)¹; Alipour Bonab, Shahin (United Kingdom)¹; Abdolahi, Mohsen (United Kingdom)¹; Song, Wenjuan (United Kingdom)¹; Flynn, David (United Kingdom)¹; Yazdani-Asrami, Mohammad (United Kingdom)¹

1 - CryoElectric Research Lab, Propulsion, Electrification & Superconductivity group, Autonomous Systems and Connectivity division, James Watt School of Engineering, University of Glasgow, Glasgow

G12 8QQ, United Kingdom

Marchetti, Stefano SS - (27909) - COMPUTATIONAL RISK ASSESSMENT FRAMEWORK FOR COUPLED HIGH TEMPERATURE ELECTROLYSIS FACILITIES POWERED BY NUCLEAR POWER PLANTS

Marchetti, Stefano (Italy)¹; Di Maio, Francesco (Italy)¹; Wismer, Samantha E. (United States of America)²; Groth, Katrina M. (United States of America)²; Zio, Enrico (Italy)¹

1 - Politecnico di Milano; 2 - University of Maryland, United States of America

SS-32: Advancing Multi-Hazard Risk Frameworks through Life-Cycle Assessment for Sustainable and Resilient Built Environments **Meeting room 10 - Level -1**

Chairs

Shaghayegh Karim Zadeh Naghshineh

Amirhossein Mohammadi

Speaker

Karimzadeh, Shaghayegh SS - (27620) - DEVELOPMENT OF A NOVEL REPLACEABLE STEEL FUSE FOR EARTHQUAKE-RESILIENT PRECAST CONCRETE FRAMES

Ghamari, Ali (Iran)¹; Karimi, Imran (Iran)²; Karimzadeh, Shaghayegh (Portugal)³; Lourenço, Paulo B. (Portugal)³

1 - Islamic Azad University; 2 - University of Tabriz; 3 - University of Minho

Caicedo Díaz, Daniel SS - (27691) - EARTHQUAKE AND DETERIORATION INCLUSIVE PROBABILISTIC LIFE-CYCLE ASSESSMENT (EDP-LCA) FRAMEWORK FOR EXISTING UNREINFORCED MASONRY BUILDINGS

Caicedo Díaz, Daniel (Portugal)¹; Karimzadeh, Shaghayegh (Portugal)¹; Lourenço, Paulo B. (Portugal)¹

1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal

Mohammadi, Amirhossein SS - (27692) - ENVIRONMENTAL AND ECONOMIC ASSESSMENT OF A RELIABILITY-BASED DESIGN MODEL FOR FRP-CONFINED CONCRETE COLUMNS

Mohammadi, Amirhossein (Portugal)¹; Shayanfar, Javad (Portugal)¹; Barros, Joaquim A.O. (Portugal)¹

1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal

Cruz, Alejandro SS - (27720) - INTEGRATING PROBABILISTIC LIQUEFACTION HAZARD ASSESSMENT WITHIN MULTI-HAZARD URBAN RISK FRAMEWORKS: APPLICATION TO AGUABLANCA, CALI (COLOMBIA)

Cruz, Alejandro (Portugal)^{1,3}; Karimzadeh, Shaghayegh (Portugal)¹; Chieffo, Nicola (Portugal)²; Sandoval, Eimar (Portugal)³; Lourenço, Paulo B. (Portugal)¹

1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - Department of Engineering, School of Computing and Engineering, University of Huddersfield, Queensgate, Huddersfield HD1 3DH, UK; 3 - G-7, School of Civil Engineering and Geomatics, Universidad del Valle, Colombia.

17:30

19:00 Icebreaker activity This is a special activity that will bring together young people and senior participants for a meaningful exchange of experiences and knowledge.

Date: 16th June

Time: 17:30 – 19:00

Location: Fórum Braga

(Per invitation Only)

This activity will consist of an interactive session where students will have the opportunity to engage directly with senior participants, fostering dialogue, sharing perspectives, and building valuable connections across generations. The activity will be complemented by live music, canapés and soft drinks.

Live Music by PER CURA or PERCURA



quarta-feira, 17 junho 2026

08:30

19:00 **Registration** Forum Braga Foyer - Level 0

09:00

10:30 **Round table 2 (communities risks): Are we living in a safe world?** Grand Auditorium - Level 0

Chairs

Stefan Schauer

Speaker

Guido Rianna

Henrik Hassel*

Stefan Schauer

Regina Rosina Geierhofer

10:30

11:00 **Coffee break** Forum Braga Foyer - Level 0

11:00

12:30 **Parallel Sessions**

Session: MA7 – Simulation for Safety and Reliability Analysis Grand Auditorium - Level 0

Chairs

Monika Reif

Edoardo Patelli

Speaker

Hannus, Pål Henrik OC - (26309) - DATA-DRIVEN ANALYSIS OF ENCOUNTER SCENARIOS TO QUANTIFY COLREG-COMPLIANT AUTONOMOUS VESSEL BEHAVIOR <u>Hannus, Pål Henrik</u> (Norway)¹; Engen, Martine Grøttum (Norway)¹; Engelhardtzen, Øystein (Norway)¹; Pedersen, Tom Arne (Norway)¹; Hemrich, Minos (Norway)² 1 - Group Research and Development, DNV, Norway; 2 - Maritime Ship Classification, DNV, Norway
Du, Shaoyang OC - (26380) - A COUPLED RIGID-FLEXIBLE DYNAMICS AND STOCHASTIC PROCESS MODEL FOR WEAR PREDICTION IN MULTI-BAR LINKAGES <u>Du, Shaoyang</u> (China)¹; Zhang, Chao (China)¹; Wang, Shaoping (China)¹; Lu, Yaohui (China)^{1,2}; Chen, Rentong (China)^{1,3} 1 - Beihang University; 2 - University of Seville; 3 - Chongqing University
Hoffe, Leon OC - (26423) - MULTIVARIATE SIMULATION OF MANUFACTURING PROCESSES BASED ON FLEET SIMULATION: CASE STUDY IN METAL SAWING <u>Hoffe, Leon</u> (Germany)¹; Meslem, Doha (Germany)¹; Auer, Alicia (Germany)¹; Bracke, Stefan (Germany)¹ 1 - Chair of Reliability and Risk Analytics, University of Wuppertal
Fernández Moguel, Leticia OC - (26439) - FROM ODDS TO SIMULATION: AUTOMATIC EXECUTABLE RAILWAY SCENARIO GENERATION <u>Fernández Moguel, Leticia</u> (Switzerland)¹; Kälin, Tommy Lee (Switzerland)¹; Brunner, Stefan (Switzerland)¹; Reif, Monika (Switzerland)¹; Shin, Jiwon (Switzerland)² 1 - Institute of Applied Mathematics and Physics, ZHAW Zurich University of Applied Sciences; 2 - Stadler Signalling
Jung, Donghee OC - (26454) - ADAPTIVE SAMPLING FRAMEWORK FOR DATA-EFFICIENT AI PREDICTION OF PARAMETER TRENDS IN SMALL MODULAR REACTOR SIMULATIONS <u>Jung, Donghee</u> (Korea, Republic of)¹; Gook Kang, Hyun (United States of America)²; Lee, Seung Jun (Korea, Republic of)¹ 1 - Department of Nuclear Engineering, Ulsan National Institute of Science and Technology (UNIST), Republic of Korea; 2 - Department of Mechanical, Aerospace, and Nuclear Engineering, Rensselaer Polytechnic Institute (RPI), United States
Tulga Martini, Ingrid OC - (27630) - A COMPARISON BETWEEN STATECHARTS AND PETRI NETS IN THE CONTEXT OF DYNAMIC PRA MODELING Rychkov, Valentin (France)¹; Picoco, Claudia (France)¹; <u>Tulga Martini, Ingrid</u> (France)¹ 1 - EDF R&D
Ma, Yuliang OC - (27766) - A SIMULATION-DRIVEN FRAMEWORK FOR RISK-BASED MAINTENANCE USING DIGITAL TWIN Nadaffars, Ahmadreza (Iran)¹; Bohár, Gábor (Hungary)¹; Szeles, József (Hungary)^{1,3}; Morozov, Andrey (Germany)⁴; Thönnessen, David (Germany)²; Ruppert, Tamás (Hungary)¹; <u>Ma, Yuliang</u> (Germany)⁴ 1 - University of Pannonia, Department of System Engineering; 2 - proTEC-Vision Automation GmbH; 3 - Silver Frog Ltd.; 4 - University of Stuttgart, Institute of Industrial Automation and Software

Engineering

Session: MA3 – Foundations of Risk and Reliability Assessment and Management **Small Auditorium - Level 1**

Chairs

Ingrid Glette-Iversen

Terje Aven

Speaker

Berres, Axel OC - (26268) - IS IT FRAGILE? QUALITY AND CONSISTENCY IN COLLABORATIVE HAZARD IDENTIFICATION

Berres, Axel (Germany)¹

1 - German Aerospace Center

Gao, Xueli OC - (27672) - RELIABILITY CONSIDERATIONS IN HYDROGEN SAFETY LIFECYCLE MANAGEMENT

Gao, Xueli (Norway)¹; Sarshar, Sizarta (Norway)¹

1 - Risk and Safety Department, Institute for Energy Technology, Norway

Pereira, José Cristiano OC - (24058) - PREREQUISITES FOR RELIABILITY ENGINEERING: ASSESSING MAINTENANCE MATURITY FOR SUSTAINABLE EQUIPMENT AVAILABILITY

Mange Esteve, Cleber (Brazil)¹; Oliveira Gonçalves, Heitor (Brazil)¹; Gonçalves Castro Jr, Afonso (Brazil)¹; Freitas Do Amaral, Renato (Brazil)¹; Pereira, José Cristiano (Brazil)¹

1 - Catholic University of Petropolis

Warmuth, Jens OC - (26153) - FAILURE MECHANISMS, MODES, EFFECTS, AND DIAGNOSTICS ANALYSIS – A NOVEL APPROACH TO INCLUDE PREDICTIVE HEALTH MONITORING INTO FUNCTIONAL SAFETY

Warmuth, Jens (Germany)¹

1 - Fraunhofer Institute for Integrated Circuits IIS

Jiang, Ping OC - (26234) - A WEIBULL RELIABILITY QUALIFICATION TEST PLAN DERIVATION METHOD BASED ON DATA FROM SIMILAR PRODUCTS

Jiang, Ping (China)¹; Xing, Yunyan (China)¹; Sun, Jianbin (China)¹; Li, Minghao (China)¹

1 - National University of Defense Technology

Jochumsson, Thorvaldur OC - (26241) - A MODULAR HAZARD ONTOLOGY BASED ON IEC 61508

Jochumsson, Thorvaldur (Sweden)^{1,2}; Hänninen, Kaj (Sweden)¹; Saadatmand, Mehrdad (Sweden)^{1,3}; Lundqvist, Kristina (Sweden)¹

1 - Mälardalen University; 2 - H2solo; 3 - Research Institutes of Sweden

Xuetong, Ku OC - (26262) - RELIABILITY ASSESSMENT METHOD FOR MOTORS UNDER EXTREME ENVIRONMENTS BASED ON COMPETING FAILURE MODELING

Xuetong, Ku (China)¹; Huiqiang, Li (China)¹; Huan, Lu (China)²; Guo, Chen (China)²; Chunping, Hu (China)³; Jiageng, Li (China)¹; Jun, Yao (China)¹; Xiaohui, Wang (China)¹; Xiaohong, Wang (China)¹; Xiaogang, Li (China)¹; Guicui, Fu (China)¹; Wu, Sa (China)¹; Luo, Ji (China)¹

1 - Beihang University; 2 - AECC Sichuan Gas Turbine Establishment; 3 - China Aviation Engine Nanjing Aero-Propulsion Co., Ltd.

Session: MA10 – Resilience Engineering **Congress Room 1 - Level 1**

Chairs

Eric Rigaud

Graeme Troxell (Fort Collins)

Speaker

Liu, Wang OC - (26384) - RESILIENCE ASSESSMENT AND OPTIMIZATION APPROACH OF SUPPLY CHAIN SYSTEM BASED ON COMPLEX NETWORK

Liu, Wang (China)¹; Jichao, Li (China)¹; Tianyang, Lei (China)¹; Ping, Jiang (China)¹; Shuaiwen, Tang (China)¹; Haiyue, Yu (China)¹

1 - National University of Defense Technology

Serafeim, Lianna OC - (26506) - RISK AND RESILIENCE ASSESSMENT OF INLAND WATERWAY TRANSPORT NETWORKS

Louzis, Konstantinos (Greece)¹; Koimtoglou, Marios (Greece)¹; Koimtoglou, Alexandros (Greece)¹; Ventikos, Nikolaos P. (Greece)¹; Serafeim, Lianna (Greece)¹; Siokouros, Panayiotis (Greece)¹

1 - National Technical University of Athens (NTUA)

Martini, Till OC - (26564) - EXPLORING CAUSAL REASONING FOR EXPLAINABLE RESILIENCE QUANTIFICATION

Chino, Magherita (Germany)¹; Häring, Ivo (Germany)¹; Martini, Till (Germany)¹; Finger, Jörg (Germany)²; Stolz, Alexander (Germany)¹

1 - Fraunhofer EMI, Germany; 2 - INATECH, University of Freiburg, Germany

Troxell, Graeme OC - (26573) - RESILIENCE ASSURANCE FOR CRITICAL SYSTEMS: LESSONS FROM THE 2025 INTERLOCK WHOLE-OF-STATE INFRASTRUCTURE AND PUBLIC SAFETY SUMMIT

Paglioni, Vincent (United States of America)¹; Troxell, Graeme (United States of America)²

1 - Risk, Reliability, & Resiliency Characterization (R3C) Lab, Department of Systems Engineering, Colorado State University; 2 - Blue Green Decisions Lab, Department of Systems Engineering, Colorado State University

Session: MA1 – Accident and Incident Modeling **Congress Room 2 - Level 1**

Chairs

Speaker

Myklebust, Thor OC - (26092) - FROM FRAGMENTS OF INFORMATION TO EVIDENCE STRENGTHENING COLLISION INVESTIGATION FOR SOFTWARE DEFINED VEHICLES

Myklebust, Thor (Norway)¹

1 - SINTEF

Myklebust, Thor OC - (26433) - RED TEAM FOR SAFETY. AI HIGH-RISK PRODUCTS AND SYSTEMS

Myklebust, Thor (Norway)¹

1 - SINTEF

Iaiani, Matteo OC - (26431) - IDENTIFICATION OF RELEVANT NATECH SCENARIOS FOR OFFSHORE O&G INSTALLATIONS THROUGH BAYESIAN NETWORK ANALYSIS OF PAST ACCIDENTS

Iaiani, Matteo (Italy)¹; Tugnoli, Alessandro (Italy)¹; Cozzani, Valerio (Italy)¹

1 - Alma Mater Studiorum - University of Bologna

Steen, Riana OC - (27876) - A HUMAN-CENTRED APPROACH TO ACCIDENT ANALYSIS

Steen, Riana (Norway)¹; Olav Stensli, Hans (Norway)¹; O. Johnsen, Stig (Norway)²; Nazir, Salman (Norway)³

1 - University of South-Eastern (USN), Norway; 2 - Department of Design, Norwegian University of Science and Technology, Norway; 3 - Business School, NORDLAB, Nord University, Bodø, Norway

Spouge, John OC - (26244) - TESTING THE LINEARITY ASSUMPTION IN LEAK FREQUENCIES FOR OFFSHORE PROCESS EQUIPMENT

Spouge, John (United Kingdom)¹; Bain, Brian (United Kingdom)²

1 - Amber Safety Consulting Ltd; 2 - Rubislaw Risk Consulting Ltd

Heß, Philipp; Hoffe, Leon OC - (26445) - REALIZATION OF A CIRCULAR ECONOMY FOR SOLDER PASTES: DEVELOPMENT OF A MULTI-STAGE SEPARATION AND RECOVERY PROCESS

Heß, Philipp (Germany)¹; Bracke, Stefan (Germany)¹; Hoffe, Leon (Germany)¹

1 - University of Wuppertal

Session: MA6 – Mathematical and Computational Methods in Reliability and Safety **Congress Room 3 - Level 1**

Chairs

Elena Zaitseva

Vitaly Levashenko

Speaker

Westermann, David OC - (27841) - CROSS-VALIDATION VS. INFORMATION CRITERIA: WEIBULL MODEL SELECTION UNDER INCOMPLETE AND UNCERTAIN FAILURE DATA

Westermann, David (Switzerland)^{1,2}; Dazer, Martin (Germany)²; Felsberger, Lukas (Switzerland)¹;

Uythoven, Jan (Switzerland)¹; Wollmann, Daniel (Switzerland)¹

1 - Machine Protection and Electrical Integrity Group, European Organization for Nuclear Research (CERN), Geneva, Switzerland; 2 - Institute of Machine Components (IMA), University of Stuttgart, Stuttgart, Germany

Saintis, Laurent OC - (27843) - CAPITALISATION OF REX DATA FOR USE IN PREDICTIVE RELIABILITY DATABASES

Saintis, Laurent (France)¹; Pelloquin, Gaëtan (France)²; Montigaud, Thibault (France)²; Pelloquin, Abdessamad (France)¹; Indmeskine, Fatima-Ezahra (France)¹

1 - Univ Angers, LARIS, SFR MATHSTIC, F-49000 Angers, France; 2 - MBDA France

Levashenko, Vitaly OC - (27904) - THE DEVELOPMENT OF A BINARY DECISION DIAGRAM BASED ON A HASSE DIAGRAM

Zaitseva, Elena (Slovakia)¹; Levashenko, Vitaly (Slovakia)¹; Brenzei, Nicolae (France)²

1 - Zilinska univerzita v Ziline; 2 - Université de Lorraine

Gupta, Pradhumn OC - (29174) - FAILURE ORDER-BASED RELIABILITY MODELLING FRAMEWORK FOR REPAIRABLE SYSTEMS

Gupta, Pradhumn (India)¹; Chaturvedi, Sanjay Kumar (India)¹

1 - Subhir Chaudhary School of Quality and Reliability, IIT Kharagpur

Session: MA5 – Maintenance Modeling and Applications **Congress Room 4 - Level 1**

Chairs

Mitra Fouladirad

Bram De Jonge

Speaker

Viaron, Kimberley OC - (26191) - IS IT WORTH DEVELOPING DIGITAL TWINS FOR INDUSTRIAL MAINTENANCE? CURRENT TRENDS AND FIRST ASSESSMENT ELEMENTS

Berdal, Antoine (France)¹; Padrutt, Maxence (France)¹; Ravalohery Rason, Andriasahimisedra (France)¹; Julien, Nathalie (France)²; Viaron, Kimberley (France)²

1 - University of Southern Brittany, Lorient, FRANCE; 2 - Lab-STICC (UMR CNRS 6285), University of Southern Brittany, Lorient, FRANCE.

Esposito, Nicola OC - (26458) - ON THE VALUE OF INFORMATION FROM INSPECTIONS IN CONDITION-BASED MAINTENANCE OF DEGRADING UNITS

Esposito, Nicola (Italy)¹; Bérengruer, Christophe (France)²; Giorgio, Massimiliano (Italy)³

1 - Scuola Superiore Meridionale; 2 - GIPSA Lab, Université Grenoble Alpes; 3 - Università degli Studi di Napoli Federico II

Szpytko, Janusz OC - (27884) - CONCEPTUAL FRAMEWORK FOR PREDICTIVE MAINTENANCE IN URBAN MASS TRANSPORT USING SIGNAL PROCESSING AND GENERATIVE AI

Szpytko, Janusz (Poland)¹; Keno, Wasihun (Ethiopia)¹

1 - AGH University of Krakow

Pytte, Marita OC - (26164) - HIGHER CORRECTIVE MAINTENANCE BACKLOG IS ASSOCIATED WITH HIGHER INCIDENT FREQUENCY: A LONGITUDINAL STUDY OF NORWEGIAN OFFSHORE INSTALLATIONS FROM 2015-2023

Pytte, Marita (Norway)¹; Lein Aalberg, Asbjørn (Norway)²; Øien, Knut (Norway)²; Schuchert, Astrid (Norway)³

1 - Safetec Nordic AS; 2 - SINTEF Digital AS; 3 - Norwegian Ocean Industry Authority (Havtil)

Wu, Bei OC - (26197) - JOINT OPTIMIZATION OF MAINTENANCE, DATA BACKUP, AND LOAD ADJUSTMENT STRATEGIES FOR DATA CENTER SYSTEMS

Wu, Bei (China)¹; Bai, Mengmeng (China)¹

1 - Northwestern Polytechnical University

Maraha, Mirel OC - (26239) - MARKOV MODEL FOR JOINT OPTIMIZATION OF OPERATION AND MAINTENANCE FOR NAVY SHIPS

Maraha, Mirel (Netherlands)^{1,2}; Westerweel, Bram (Netherlands)³; Tinga, Tiedo (Netherlands)^{1,3}

1 - University of Twente; 2 - Thales Nederland B.V.; 3 - Netherlands Defence Academy

Castro, Inma T. OC - (26265) - A HIDDEN MARKOV MODEL FRAMEWORK FOR A TWO-COMPONENT SYSTEM WITH MIXED OBSERVABILITY AND DEPENDENCE

Gámiz Pérez, Maria Luz (Spain)¹; Zhang, Nan (China)²; Castro, Inma T. (Spain)³

1 - University of Granada; 2 - Beijing Institute of Technology; 3 - University of Extremadura

Session: AA3 – Civil Engineering **Congress Room 5 - Level 1**

Chairs

Oswaldo Morales Napoles

Enrique Aldao Pensado

Speaker

Kakaie, Arman OC - (26474) - PROBABILISTIC MODELING OF ULTRA-HIGH PERFORMANCE CONCRETE STRENGTH

Kakaie, Arman (Portugal)¹; Guedes Soares, Carlos (Portugal)¹

1 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Aldao, Enrique OC - (26079) - FROM INSPECTION TO ACTION: PROBABILISTIC LLM-BASED PLANNING FOR RESOURCE-AWARE RAILWAY MAINTENANCE

Aldao, Enrique (Spain)¹; Ríos-Otero, Eduardo (Spain)¹; Veiga-López, Fernando (Spain)¹; González-Jorge, Higinio (Spain)¹

1 - University of Vigo

Lanzafame, Robert OC - (26081) - ELICITING THE INFLUENCE OF MOLEHILLS ON THE STABILITY OF RIVER DIKES WITH STRUCTURED EXPERT JUDGMENT.

Mares-Nasarre, Patricia (Netherlands)¹; Lanzafame, Robert (Netherlands)¹; Guan, Zheng (Netherlands)¹; Morales-Nápoles, Oswaldo (Netherlands)¹

1 - Delft University of Technology

Calvar, Sofía OC - (26085) - INNOVATIVE PAVEMENT SAFETY ASSESSMENT THROUGH INTEGRATED BIM AND AR VISUALIZATION

Calvar, Sofía (Spain)¹; Balado, Jesús (Spain)¹; Pudell, Paula (Spain)¹; Elseicy, Ahmed (Spain)¹; Solla, Mercedes (Spain)¹

1 - CINTECX, Universidade de Vigo, Geotech research group, Spain

Ghannam, Nisrine OC - (26136) - MACROSCOPIC MODEL FOR TRACKING THE EVOLUTION OF ROAD INFRASTRUCTURE DEGRADATION AND PREDICTING MAINTENANCE NEEDS

Ghannam, Nisrine (France)¹; Rabah, Mohamed (France)¹; Quigniot, Sebastien (France)¹; Redondin, Maxime (France)¹

1 - COLAS

Aviram, Ady OC - (26383) - EARTHQUAKE RESILIENCE OF ESSENTIAL FACILITIES AND CRITICAL INFRASTRUCTURE THROUGH USE OF STATE-OF-THE-ART SEISMIC ISOLATION TECHNOLOGIES

Aviram, Ady (United States of America)¹

1 - Earthquake Protection Systems, Inc.

Ganji, Mohammadreza OC - (26465) - BARRIERS AND CHALLENGES TO THE CIRCULAR ECONOMY PARADIGM SHIFT IN SWEDEN RAILWAY SYSTEM

Ganji, Mohammadreza (Sweden)¹; Garmabaki, A.H.S (Sweden)¹; Juntti, Ulla (Sweden)²; Famurewa, Stephen (Sweden)³

1 - Division of operation and maintenance, Luleå University of Technology, Luleå, Sweden; 2 - Omicold, Luleå, Sweden; 3 - Swedish Transport Administration, Sweden

SS-11: Reinforcement Learning for Reliability, Availability, Maintainability and Safety (RAMS) **Meeting room 6 -**

Level -1

Chairs

Piero Baraldi

Enrico Zio

Speaker

Rocchetta, Roberto SS - (26150) - LEARNING I&M POLICIES FOR BRIDGES AND WATERWAYS UNDER PARTIAL OBSERVABILITY

Rocchetta, Roberto (Switzerland)¹; Marsili, Francesca (Germany)²; Rosato, Federico (Switzerland)¹; Medici, Vasco (Switzerland)¹; Kessler, Sylvia (Germany)²
1 - Scuola universitaria professionale della Svizzera italiana (SUPSI); 2 - Helmut-Schmidt-Universität

Thoma, Kilian SS - (26319) - CONTEXT-AWARE UAV SWARM COORDINATION FOR FLOOD RESPONSE USING DEEP REINFORCEMENT LEARNING

Thoma, Kilian (Germany)¹; Guo, Weian (China)²; Hinz, Marcin (Germany)¹

1 - Munich University of Applied Sciences HM; 2 - Tongji University, Shanghai

Yang, Xianyi SS - (27612) - ENHANCING POWER GRID RESILIENCE THROUGH STOCHASTIC DYNAMIC RESTORATION PLANNING WITH FERRORESONANCE AVOIDANCE

Yang, Xianyi (Portugal)¹; Bassière, Alicia (Portugal)¹; Puchinger, Jakob (Portugal)^{1,2}; Abdin, Adam (Portugal)¹; Barros, Anne (Portugal)¹

1 - CentraleSupélec, Université Paris-Saclay, France; 2 - EM Normandie, France

SS-21: Case Studies on Predictive Reliability: An Industrial Perspective **Meeting room 7 - Level -1**

Chairs

Alexander Müller

Speaker

Bonato, Marco SS - (26273) - SERVICE LIFE RELIABILITY PREDICTIONS FOR HEAT EXCHANGERS: A 9 YEARS-WARRANTY DATA ANALYSIS

Bonato, Marco (Portugal)²; Kathirayan, Veeraperumal (Portugal)¹

1 - Valeo India Private Limited, India; 2 - Valeo Power Division, France

François, Massé SS - (26329) - RELIABILITY TEST TAILORING FOR REDUCERS VALIDATION

François, Massé (Portugal)¹

1 - Valeo Power Division, France

Lewitschnig, Horst SS - (26598) - A NEW PERSPECTIVE FOR MISSION PROFILE MODELLING

Lewitschnig, Horst (Austria)¹; Mayrhofer, Marcus (Austria)²; Filzmoser, Peter (Austria)²

1 - Infineon Technologies Austria AG; 2 - TU Vienna

Müller, Alexander SS - (27758) - ALTERNATIVE RELIABILITY TEST TAILORING METHODS FOR HIGH-VOLTAGE PRODUCTS

Müller, Alexander (Germany)¹; Bouajila, Walid (Germany)¹

1 - Valeo eAutomotive Germany GmbH

Bonnaud, Pascal SS - (28960) - RELIABILITY LIBRARY USING THE RELIABILITY BLOCK DIAGRAM METHOD BASED ON FIELD RETURN DATA

Bonnaud, Pascal (France)¹; Laabadi, Houda (France)¹; Saintis, Laurent (France)²

1 - Valeo; 2 - Polytech Angers

Brown, Andrew SS - (29047) - RELIABILITY TEST TUNING FOR EV PROPULSION SYSTEMS USING PHYSICS-BASED ANALYSIS METHODS

Brown, Andrew (United Kingdom)¹; Korzec, Jerzy (United Kingdom)¹

1 - JLR

SS-23: Structural Health Monitoring and Non-Destructive Testing for the Safety and Reliability of Civil Infrastructure **Meeting room 8 - Level -1**

Chairs

Francesca Marsili

Leandro Iannacone

Speaker

Iannacone, Leandro SS - (26298) - VALUE OF INFORMATION OF SENSORS EMBEDDED IN CONCRETE BRIDGES

Iannacone, Leandro (Sweden)¹; Marsili, Francesca (Germany)²; Kessler, Sylvia (Germany)²

1 - Lund University; 2 - Helmut-Schmidt University

Hsieh, I-Ting SS - (27854) - A DOMAIN-ADAPTIVE FRAMEWORK FOR DAMAGE DETECTION OF OFFSHORE WIND TURBINE JACKET SUBSTRUCTURES USING MACHINE LEARNING

Hsieh, I-Ting (Portugal)¹; Lin, Tung-Yu (Portugal)¹; Liao, Yuan-Sheng (Portugal)¹; Lin, Chi-Ying (Portugal)¹

1 - Department of Civil Engineering, National Yang Ming Chiao Tung University

Marsili, Francesca SS - (27890) - ASSESSING THE VALUE OF PERFORMING ULTRASONIC TESTING FOR DETECTING GROUTING DEFECTS IN PRESTRESSED CONCRETE BRIDGES

Marsili, Francesca (Portugal)¹; Dethof, Fabian (Portugal)¹; Kessler, Sylvia (Portugal)²

1 - Helmut-Schmidt-University / University of the Federal Armed Forces Hamburg; 2 - Helmut-Schmidt University / University of the Federal Armed Forces Hamburg, Germany

Figueroa, Joaquin SS - (29038) - ANALYSIS OF UNSUPERVISED DEEP LEARNING TECHNIQUES FOR DAMAGE LOCALIZATION IN COMPOSITE MATERIAL STRUCTURES USING GUIDED LAMB WAVES

Figueroa, Joaquin (Spain)¹; Azuara, Guillermo (Spain)¹; Barrera, Eduardo (Spain)¹

1 - Instrumentation and Applied Acoustics Research Group, Universidad Politécnica de Madrid, C/Nikola Tesla, s/n, 28031 Madrid, Spain

Session: AA1 – Aeronautics Aerospace **Meeting room 9 - Level -1**

Chairs

Mario P Brito

Rempe Stephan

Speaker

Solli, Bjørn-Erik OC - (26112) - TOWARDS A MILITARY RISK TAXONOMY: BRIDGING RISK SCIENCE AND NATO DOCTRINE

Solli, Bjørn-Erik (Afghanistan)¹; Borrie, Andy (United Kingdom)²

1 - North Atlantic Treaty Organization & Supreme Allied Commander Transformation's Professional Doctorate Program, Norwa; 2 - Made to Measure Mentoring Limited & Gloucestershire University, England

Rempe, Stephan OC - (26276) - IDENTIFICATION AND ASSESSMENT OF ZONAL HAZARDS EMERGING IN HIGHLY INTEGRATED DISTRIBUTED ELECTRIFIED PROPULSION SYSTEMS IN AVIATION

Rempe, Stephan (Germany)¹; Frank, Robin (Germany)¹

1 - German Aerospace Center - DLR

Calvin, Giovanna OC - (26347) - MULTISCALE STRUCTURAL RELIABILITY WORKFLOW FOR VIRTUAL TESTING OF COMPOSITE AEROSTRUCTURES

Calvin, Giovanna (Spain)¹; Leciñana, Iñaki (Spain)¹; Lahidalga, Leire (Spain)¹; Usabiaga, Hodei (Spain)¹; Manterola, Julen (Spain)¹

1 - IKERLAN

Session: AA9 – Land Transportation **Meeting room 10 - Level -1**

Chairs

Daniel Straub

Pierre Dersin

Speaker

Myklebust, Thor OC - (26090) - SHIPPABLE DOCUMENT AND MARKET ACCESS FOR HIGH-RISK AI SYSTEMS

Myklebust, Thor (Norway)¹

1 - SINTEF

Tan, Kang Rui OC - (26226) - A REVIEW OF ELECTROPNEUMATIC POINT SYSTEMS: FAULT DETECTION, DIAGNOSIS, CONDITION MONITORING, AND PROGNOSTIC APPROACHES

Tan, Kang Rui (United Kingdom)¹; Remenyte-Prescott, Rasa (United Kingdom)¹; Nkwocha, Chidi (United Kingdom)²; Stevens, Trevor (United Kingdom)³; Tickem, David (United Kingdom)²; Lowten, Mark (United Kingdom)²; Heath, Scott (United Kingdom)²; O'Neill, Mark (United Kingdom)³

1 - University of Nottingham; 2 - Hitachi Rail (UK); 3 - Transport for London (TfL)

Slotsvik, Tone Njølstad OC - (26297) - TOWARDS SAFE REMOTE OPERATION OF AUTOMATED BUSES: A SYSTEMATIC REVIEW OF INSIGHTS FROM COMPARABLE DOMAINS

Slotsvik, Tone Njølstad (Norway)¹; Wake, Jo Dugstad (Norway)²; Gressgård, Leif Jarle (Norway)¹; Holte,

Kari Anne (Norway)¹

1 - Working Life, NORCE, Norway; 2 - Digital Systems, NORCE, Norway

Assaf, Katja OC - (26139) - USE CASE ANALYSIS OF QUANTUM KEY DISTRIBUTION IN RAILWAY SYSTEMS
Assaf, Katja (Germany)¹; Ramsdorf, Timo (Germany)²; Friedenberger, Dirk (Germany)¹; Pirl, Lukas (Germany)¹; Milius, Birgit (Germany)²; Polze, Andreas (Germany)¹

1 - Hasso Plattner Institute, University of Potsdam; 2 - TU Berlin

Fizzi, Nour El Houda OC - (26368) - INTEGRATING ARTIFICIAL INTELLIGENCE IN THE DEVELOPMENT PROCESS OF FUNCTIONAL SAFETY ACCORDING TO ISO 26262

Fizzi, Nour El Houda (Germany)¹; Schepers, David (Germany)¹; Engels, Benjamin (Germany)²

1 - Hochschule Ruhr West; 2 - Smart Mechatronics GmbH

12:30

14:00 **Lunch**

14:00

15:30 **Parallel Sessions**

Session: MA7 – Simulation for Safety and Reliability Analysis **Grand Auditorium - Level 0**

Chairs

Nicola Pedroni

Robert Giel

Speaker

Li, Ruyue OC - (27800) - CAUSAL EMERGENCE THEORY-BASED DYNAMIC CHARACTERISTIC ANALYSIS OF TASK COLLABORATION IN UAV SWARMS

Li, Ruyue (China)¹; Wang, Xiaohong (China)¹; Wang, Lizhi (China)¹; Yao, Jun (China)¹; Wang, Xiaohui (China)¹; Fu, Guicui (China)¹

1 - School of Reliability and Systems Engineering, Beihang University

Werbinska-Wojciechowska, Sylwia OC - (27864) - A FUZZY LOGIC-BASED DIGITAL TWIN FRAMEWORK FOR RISK-ORIENTED SAFETY ASSESSMENT IN WASTE SORTING FACILITIES

Di Nardo, Mario (Italy)¹; Gallo, Mosè (Italy)²; Giel, Robert (Poland)³; Werbinska-Wojciechowska, Sylwia (Poland)³

1 - Università Telematica Pegaso; 2 - University of Naples Federico II; 3 - Wroclaw University of Science and Technology

Isaksen, Stefan Landsverk OC - (27919) - PRODUCTION AVAILABILITY STUDIES FOR SOLAR POWER
Isaksen, Stefan Landsverk (Norway)¹; Selvik, Jon Tømmerås (Norway)²

1 - TÜV Rheinland Safetec; 2 - NORCE, UiS

Bai, Yiping OC - (28996) - ENERGY-BASED QRA OF COUPLING EVENTS IN THE URBAN LIFELINE SYSTEM
Bai, Yiping (China)¹; Zhang, Li (China)²; Wu, Jiansong (China)²; Weng, Wenguo (China)¹
1 - Tsinghua University; 2 - China University of Mining & Technology-Beijing

Cai, Yue OC - (29016) - SIMULATION ENGINES FOR MAINTENANCE EVENTS IN HETEROGENEOUS MACHINES

Cai, Yue (Belgium)^{1,2}; Boute, Robert (Belgium)^{1,2,3}; Deprez, Laurens (Belgium)¹
1 - KU Leuven; 2 - Flanders Make@KU Leuven; 3 - Vlerick Business School

Sirjani, Marjan OC - (26348) - WHAT WE KNOW WE DON'T KNOW: SYSTEMATIC RISK IDENTIFICATION FROM CONTRADICTIONARY SAFETY DOCUMENTATION

Ebrahimi, Masoud (Sweden)¹; Hänninen, Kaj (Sweden)¹; Lundqvist, Kristina (Sweden)¹; Sirjani, Marjan (Sweden)¹
1 - Mälardalen University

Sirjani, Marjan OC - (27730) - WHEN REPAIR IS NOT ENOUGH: SYSTEMATIC MITIGATION OF INCOMPLETE KNOWLEDGE GRAPHS

Ebrahimi, Masoud (Sweden)¹; Kaj Hänninen, Kaj (Sweden)¹; Lundqvist, Kristina (Sweden)¹; Sirjani, Marjan (Sweden)¹
1 - Mälardalen University

Session: MA3 – Foundations of Risk and Reliability Assessment and Management **Small Auditorium - Level 1**

Chairs

José António Silva De Carvalho Campos E Matos

Speaker

Ghuelldre, Tony OC - (26328) - MBSA STRATEGIES FOR HANDLING DORMANT AND MULTIPLE DORMANT FAILURES

Ghuelldre, Tony (France)¹; Frazza, Christophe (France)²; Joas, Wilkinson (France)^{1,3}; Vidalie, Julien (France)^{1,4}

1 - IRT Saint Exupéry, France; 2 - SATODEV, France; 3 - IRT Saint Exupéry/Safran Aircraft Engines, France; 4 - IRT Saint Exupéry/Airbus Protect, France

Chai, Ao OC - (26362) - A NOVEL MISSION RELIABILITY ASSESSMENT APPROACH BASED ON SYSTEM PERFORMANCE SIMULATION UNDER MULTI-MISSION PROFILES

Du, Xuejiao (China)¹; Chai, Ao (China)¹; Gai, Jingbo (China)¹

1 - College of Aerospace and Civil Engineering, Harbin Engineering University

Shah, Hishma OC - (26409) - FROM RISK THEORY TO ROAD SAFETY: DEVELOPING AN AXIOMATIC RISK MEASURE FOR CONNECTED AND AUTOMATED VEHICLES (CAVS)

Shah, Hishma (United Kingdom)¹; Davies, Huw (United Kingdom)¹; Bastien, Christophe (United Kingdom)¹; Debnath, Ashim Kumar (Australia)²

1 - Centre for Future Transport and Cities, Coventry University, United Kingdom; 2 - School of Engineering, Deakin University, Waurin Ponds, Victoria, Australia

Miranda, Suci OC - (26456) - DEFINING RISK IN AGRICULTURAL LAND USE: A REVIEW OF CONCEPTUAL FOUNDATIONS AND ANALYTICAL PERSPECTIVES

Miranda, Suci (United Kingdom)¹; Brito, Mario (United Kingdom)¹; Hezarkhani, Behzad (United Kingdom)¹

1 - Department of Decision Analytics and Risks, Southampton Business School, University of Southampton

Paglioni, Vincent (Fort Collins) OC - (26574) - TOWARD A DECISION-ORIENTED ONTOLOGY OF RESILIENCE FOR COMPLEX ENGINEERED SYSTEMS

Troxell, Graeme (United States of America)¹; Paglioni, Vincent (United States of America)¹

1 - Department of Systems Engineering, Colorado State University

Van Den Heuvel, Edouard OC - (27657) - OPERATIONALISING TRUST IN THE SKY: AN INSTITUTIONAL ANALYSIS OF EASA PART-IS IMPLEMENTATION

Van Den Heuvel, Edouard (Netherlands)¹; Steen, Riana (Norway)²; Papanikou, Maria (Netherlands)³

1 - University of Amsterdam; 2 - University of South-Eastern Norway; 3 - Amsterdam University of Applied Sciences

Coetzer, Roelof OC - (27698) - A RELIABILITY-INFORMED FMECA APPROACH TO INTEGRITY RISK IN WELL SYSTEMS

Nel, Gert (South Africa)¹; Liebenberg, Shawn (South Africa)²; Koekemoer, Ockert (South Africa)¹; Coetzer, Roelof (South Africa)²

1 - School of Mechanical Engineering, North-West University; 2 - School of Mathematical and Statistical Sciences, North-West University

Geierhofer, Regina OC - (27697) - BRIDGING SAFETY AND RELIABILITY - THE EVOLVING MISSION OF IEC TC62

Geierhofer, Regina (Germany)¹

1 - IEC TC62

Session: MA10 – Resilience Engineering **Congress Room 1 - Level 1**

Chairs

Eric Rigaud

Kash Barker

Speaker

Zhang, Tianwen OC - (27824) - AN IMPROVED RESILIENCE EVALUATION METHOD FOR HIERARCHICAL NETWORKED COMMAND AND CONTROL SYSTEM

Zhang, Tianwen (China)¹; Bai, Guanghan (China)¹; Wang, Yang (China)¹; Tao, Junyong (China)¹
1 - National University of Defense Technology

Große, Christine OC - (27850) - ENGINEERING CYBER RESILIENCE UNDER RESOURCE CONSTRAINTS FOR CRITICAL INFRASTRUCTURE PROTECTION

Nilsson, Ebba Linnea (Sweden)¹; Ettehag, Hampus (Sweden)¹; Große, Christine (Sweden)¹

1 - Department of Computer Science, Electrical and Space Engineering (SRT) Division: Digital Services and Systems, Luleå University of Technology, Sweden

Barker, Kash OC - (28983) - ADDING THE BALANCE OF DISRUPTION IMPACT TO NETWORK INTERDICTION MODELS

Rocco, Claudio (United States of America)²; Barker, Kash (United States of America)¹

1 - University of Oklahoma; 2 - Universidad Central de Venezuela

Session: MA1 – Accident and Incident Modeling **Congress Room 2 - Level 1**

Chairs

Speaker

Liu, Rongfang OC - (26316) - CONNECTING PERCEPTIONS OF TRAIN OPERATIONS AND TRESPASSING BEHAVIOR VIA MACHINE LEARNING MODEL

Liu, Rongfang (United States of America)¹; Mohammed, Habeeb (United States of America)¹

1 - NCAT

Saturnino, Lorenza (Barcelona) OC - (26323) - IMPACT OF MODELLING TOOL CHOICE ON ERPG SAFETY ZONES FOR AMMONIA RELEASES

Saturnino, Lorenza (Spain)¹; Àgueda, Alba (Spain)²; Muñoz, Miguel (Spain)¹; Planas, Eulàlia (Spain)²

1 - NOVOTEC - Process Safety and Major Accidents Department, Cerdanyola del Vallès, Barcelona, 08193, Spain; 2 - Centre for Technological Risk Studies (CERTEC), Universitat Politècnica de Catalunya · Barcelona Tech, Barcelona East School of Engineering (EEBE), Avinguda Eduard Maristany, 16, Barcelona, 08019, Spain

Rescigno, Davide OC - (26377) - TOWARDS ACCURATE PREDICTIVE MODELLING OF LIQUID HYDROGEN POOL DYNAMICS

Rescigno, Davide (Norway)¹; Ustolin, Federico (Norway)¹

1 - NTNU

Lee, Jiyong OC - (26469) - PINN-BASED ONLINE MONITORING METHOD FOR SENSOR DRIFT

Lee, Jiyong (Korea, Republic of)¹; Jonghyun, Kim (Korea, Republic of)¹

1 - Korea Advanced Institute of Science and Technology

Tian, Kun OC - (27644) - INTELLIGENT VIDEO SURVEILLANCE TECHNOLOGY FOR SAFETY RISKS IN OIL AND GAS PRODUCTION OPERATIONS

Tian, Kun (China)^{1,2}; Zhang, Laibin (China)²; Wang, Jinjiang (China)²; Wang, Shunyi (China)¹; Hao, Zhuangyuan (China)¹

1 - CNPC Research Institute Of Safety&Environment Technology; 2 - China University Of Petroleum(Beijing)

Embrey, David OC - (27761) - INTEGRATING PROSPECTIVE AND RETROSPECTIVE HUMAN ERROR ANALYSIS: A NEW METHODOLOGY FOR INCIDENT INVESTIGATION AND RISK REDUCTION

Embrey, David (United Kingdom)¹

1 - Human Reliability Associates

MA14. Structural Reliability Applications + MA17. Imprecise Probabilities **Congress Room 3 - Level 1**

Chairs

Yi Luo

Meng-Ze Lyu

Speaker

Knibbe, Jelle OC - (26078) - A PROPOSED NOVEL FRAMEWORK TO ESTABLISH OPTIMAL AND ACCEPTABLE FAILURE PROBABILITIES FOR ENGINEERING STRUCTURES

Knibbe, Jelle (Netherlands)^{1,2}; Steenbergen, Raphaël (Netherlands)^{2,3}; Van Gelder, Pieter (Netherlands)¹; Pooyan Afghari, Amir (Netherlands)¹

1 - Delft University of Technology; 2 - TNO - netherlands organisation for applied scientific research; 3 - Ghent University

Napier, Aidan OC - (26548) - LOCAL AND GLOBAL SENSITIVITY ANALYSIS ON FATIGUE DAMAGE AND LIFETIME RELIABILITY OF WIND TURBINE TOWERS AND SUBSTRUCTURES.

Napier, Aidan (United Kingdom)¹; Kazemi Amiri, Abbas (United Kingdom)¹; Patelli, Edoardo (United Kingdom)¹

1 - University of Strathclyde

Wimbush, Alexander OC - (27819) - THE ZIGGURAT OF ERR: NOVEL CONFIDENCE CURVES FOR INFERENCE WITH DISCRETE DATA

Wimbush, Alexander (United Kingdom)¹

1 - University of Birmingham

Marsh, Ian OC - (28964) - DERIVING LONG-TERM APPLIANCE MISSION PROFILES FROM SHORT-TERM CONNECTIVITY DATA: METHODS AND FORECASTING APPROACHES

Belmonte, Enrico (Italy)¹; Neumann, Martin (Sweden)²; Boichuk, Vasilii (Sweden)²; Marsh, Ian (Sweden)³

1 - Electrolux Italia Spa; 2 - AB Electrolux; 3 - RISE, The Research Institutes of Sweden, AB

Chairs

Massimiliano Giorgio

Christophe Berenguer

Speaker

Berger, Tom OC - (26364) - AN EXTENSION OF THE ARITHMETIC REDUCTION OF DEGRADATION MODEL 1: DEVELOPMENT OF A GENERAL OBSERVATION SCHEME AND CONSIDERATION OF MULTIPLE TYPES OF MAINTENANCE.

Berger, Tom (France)¹; Doyen, Laurent (France)¹; Olivier, Gaudoin (France)¹; Christophe, Bérenguer (France)¹

1 - Univ. Grenoble Alpes

Wang, Zhiyang OC - (26375) - A SELECTIVE MAINTENANCE DECISION METHOD FOR PHASED-MISSION SYSTEMS CONSIDERING THE CONSEQUENCES OF FAILURES

Du, Xuejiao (China)¹; Wang, Zhiyang (China)¹; Gai, Jingbo (China)¹; Zheng, Mingsheng (China)¹; Yang, Mingrui (China)¹

1 - Harbin Engineering University

Bautista, Lucía OC - (26387) - MAINTENANCE PLANNING AND FAILURE ANALYSIS IN A SYSTEM SUBJECT TO MULTIPLE DEGRADATION

Bautista, Lucía (Spain)¹; Castro, Inma T. (Spain)¹; Moreno, Emmanuel (Spain)¹; Ahmadi, Reza (Iran)²

1 - Universidad de Extremadura; 2 - Iran University of Science and Technology

Ocheretniuk, Maksym OC - (26402) - EVALUATION OF LOCOMOTIVE WHEELSET MAINTENANCE STRATEGIES USING PETRI NET MODELLING FOR WHEELSET LIFE-CYCLE MANAGEMENT UNDER WORKSHOP RESOURCE CONSTRAINTS

Ocheretniuk, Maksym (United Kingdom)¹; Prescott, Darren (United Kingdom)¹; Yan, Rundong (United Kingdom)¹

1 - University of Nottingham

Grall, Antoine OC - (26408) - MINIMIZING CO2 EMISSIONS THROUGH PREDICTIVE MAINTENANCE: A STOCHASTIC MODELING APPROACH

Mosayebi Omshi, Elham (France)¹; Grall, Antoine (France)¹

1 - Université de Technologie de Troyes, France

De Jonge, Bram OC - (26446) - RESAMPLING FROM CONDITION DATA TO IMPROVE DATA-DRIVEN MAINTENANCE OPTIMIZATION

De Jonge, Bram (Netherlands)¹

1 - University of Groningen

Shuai, Songliang OC - (26484) - KNOWLEDGE-DRIVEN FRAMEWORK FOR MAINTENANCE ERROR PREVENTION DESIGN

Shuai, Songliang (China)¹; Guo, Ziyue (China)¹; Zhou, Dong (China)¹; Wei, Xiaomeng (China)¹; Bai, Yuchen (China)¹; Yang, Qingtian (China)¹
1 - School of Reliability and System Engineering, Beihang University, Beijing

Session: AA3 – Civil Engineering **Congress Room 5 - Level 1**

Chairs

Hélder S. Sousa

Shaghayegh Karim Zadeh Naghshineh

Speaker

Prabhu, Sameer OC - (26498) - LIDAR-BASED FRAMEWORK FOR SCAFFOLDING DESIGN RULE COMPLIANCE AND HEALTH MANAGEMENT

Prabhu, Sameer (Sweden)¹; Patwardhan, Amit (Sweden)¹; Karim, Ramin (Sweden)¹

1 - Luleå University of Technology, Sweden

Gomes, Bárbara OC - (27671) - MACHINE LEARNING-BASED STRUCTURAL RELIABILITY OF FREEFORM THIN CONCRETE SHELLS

Gomes, Bárbara (Portugal)¹; Cavaco, Eduardo (Portugal)¹; Vanzeller, Joana (Portugal)¹

1 - NOVA School of Science and Technology

Aurélien, Vuffray OC - (27745) - RELIABILITY-BASED CAPACITY DESIGN OF TIMBER CONNECTIONS COMPRISING GLUED-IN STEEL PLATES

Aurélien, Vuffray (Switzerland)¹; Alex Sixie, Cao (Switzerland)^{1,2}; Andrea, Frangi (Switzerland)¹

1 - ETH Zurich, Institute of Structural Engineering, Stefano-Franscini-Platz 5, 8093 Zürich, Switzerland;
2 - Empa - Swiss Federal Laboratories for Materials Science and Technology, Structural Engineering Research Laboratory, Ueberlandstrasse 129, Dübendorf 8600, Switzerland

SS-02: Recent Advances in Software Developments for Risk, Reliability, and Uncertainty Quantification **Meeting room 6 - Level -1**

Chairs

Adolphus Lye*

Yu Chen*

Edoardo Patelli

Speaker

Belda-Ley, Mercedes SS - (26512) - STRUCTURED INTEGRATION OF GLOBAL SENSITIVITY ANALYSIS IN QRA: AN EFFICIENT COMPUTATIONAL METHODOLOGY FOR COMPLEX MODELS

Belda-Ley, Mercedes (Denmark)¹; Sin, Gürkan (Denmark)¹

1 - Technical University of Denmark

Chen, Yu SS - (26140) - A PYTHON LIBRARY FOR STOCHASTIC MODEL UPDATING WITH BLACK-BOX MODELS USING PYUNCERTAINNUMBER

Chen, Yu (United Kingdom)¹; Rocchetta, Roberto (Switzerland)²; Nespoli, Lorenzo (Switzerland)²; Medici, Vasco (Switzerland)²; De Angelis, Marco (United Kingdom)³; Ochnio, Dawid (United Kingdom)³; Patelli, Edoardo (United Kingdom)³; Ferson, Scott (United Kingdom)¹

1 - University of Liverpool; 2 - University of Applied Sciences and Arts of Southern Switzerland; 3 - Centre for Intelligent Infrastructure, University of Strathclyde, Glasgow, United Kingdom

Kim, Yochan SS - (26209) - DEVELOPMENT OF EMBRACE-SUPPORT SOFTWARE: AN INTEGRATED SYSTEM FOR EMPIRICAL HUMAN RELIABILITY ANALYSIS IN DIGITAL NUCLEAR CONTROL ROOMS

Kim, Yochan (Portugal)¹; Kim, Jaewhan (Portugal)¹; Park, Jinkyun (Portugal)¹

1 - Korea Atomic Energy Research Institute

Hamzah, Nurhasnita SS - (26371) - OPERATIONALISING CONSEQUENCE ANALYSIS VIA A DIGITAL TWIN FOR OFFSHORE COMPRESSOR TRAINS

Hamzah, Nurhasnita (Portugal)¹; Nandhakumar, Madhumithra (Portugal)¹; Mutallimov, Turan (Portugal)¹; Tan, Henry (Portugal)¹; Idris, Ahmad Muzammil (Portugal)²

1 - University of Aberdeen; 2 - Universiti Teknologi PETRONAS

Behrendorf, Jasper SS - (27750) - SURROGATE MODELLING IN UNCERTAINTYQUANTIFICATION.JL

Behrendorf, Jasper (Portugal)¹; Broggi, Matteo (Portugal)¹; Beer, Michael (Portugal)^{1,2,3}

1 - Institute for Risk and Reliability, Leibniz University Hannover, Germany; 2 - Institute for Risk and Uncertainty, University of Liverpool, Liverpool, UK; 3 - International Joint Research Center for Engineering Reliability and Stochastic Mechanics, Tongji University, Shanghai, China

SS-12: Natural Language Processing for Reliability, Availability, Maintainability and Safety (RAMS) Applications

Meeting room 7 - Level -1

Chairs

Dario Valcamonico

Speaker

Dam, Jonas SS - (26267) - EXPLORING LARGE LANGUAGE MODELS FOR SAFETY ADVISORY ON SHIPS

Dam, Jonas (Norway)¹; Kim, Hyung Ju (Norway)¹; Kim, Donghoi (Norway)²

1 - NTNU; 2 - SINTEF Energi

Meunier-Pion, Jean SS - (26509) - AI AGENT FOR ASSESSING THE QUALITY OF FMEA REPORTS

Meunier-Pion, Jean (Portugal)¹; Zeng, Zhiguo (Portugal)¹; Barros, Anne (Portugal)¹

1 - Laboratoire de Génie Industriel, CentraleSupélec, Université Paris-Saclay

Baudoin, Solal SS - (27650) - GENERATING CODE FOR RELIABILITY ENGINEERING WITH LLMS : HUMANEVAL - REL BENCHMARK AND BASELINES

Baudoin, Solal (Portugal)¹; Meunier-Pion, Jean (Portugal)¹; Zeng, Zhiguo (Portugal)¹

1 - LGI, CentraleSupélec

Zheng, Changdong SS - (27682) - A DATA-DRIVEN FRAMEWORK FOR SYSTEMIC RISK IDENTIFICATION IN COMPLEX SYSTEMS USING LARGE LANGUAGE MODELS AND GRAPH LEARNING

Zheng, Changdong (China)¹; Peng, Wensheng (China)¹; Qiu, Shumao (China)¹; Hao, Yu (China)¹

1 - China Aero-Polytechnology Establishment, Beijing, China

Valcamonico, Dario SS - (27901) - ANNOTATING MAINTENANCE REPORTS WITH A DOMAIN-SPECIFIC ONTOLOGY AND A LARGE LANGUAGE MODELS TO EXTRACT RELIABILITY DATA FROM INDUSTRIAL SYSTEMS

Valcamonico, Dario (Italy)¹; Baraldi, Piero (Italy)¹; Zio, Enrico (Italy)¹

1 - Politecnico di Milano

Salas, Christian SS - (30438) - CORRECTING MAINTENANCE REPORTS USING LARGE LANGUAGE MODELS

Salas, Christian (Chile)¹; Valcamonico, Dario (Italy)²; Baraldi, Piero (Italy)²; Durán, Orlando (Chile)¹;

Mansilla, Gustavo (Chile)¹

1 - Mechanical Engineering Department, Pontificia Universidad Católica de Valparaíso, Chile.; 2 - Energy Department, Politecnico di Milano, Italy

SS-28: Surrogate-Assisted Optimization for Resilience: How ML and AI Tools can Enable Uncertainty-Aware Decisions Involving Complex Physical Models [Meeting room 8 - Level -1](#)

Chairs

Enrico Ampellio

Roberto Rocchetta

Speaker

Zapparoli, Lorenzo SS - (28959) - SPECTRAL APPROACH FOR EFFICIENT VIRTUAL POWER PLANT SCHEDULING UNDER UNCERTAINTY

Zapparoli, Lorenzo (Switzerland)¹; Gjorgiev, Blaže (Switzerland)¹; Sansavini, Giovanni (Switzerland)¹

1 - ETH Zurich

Yu, Wanhong SS - (26545) - SURROGATE-ASSISTED INVESTIGATION OF NEAR-OPTIMAL SOLUTIONS FOR UNCERTAINTY-AWARE PLANNING OF RESILIENT ENERGY SYSTEMS

Yu, Wanhong (Switzerland)¹; Ampellio, Enrico (Switzerland)¹; Gjorgiev, Blazhe (Switzerland)¹;

Sansavini, Giovanni (Switzerland)¹

1 - Reliability and Risk Engineering, Institute of Energy and Process Engineering, ETH Zurich

Podofilini, Luca SS - (28965) - BAYESIAN BELIEF NETWORK SURROGATES FOR ENERGY SYSTEM MODELLING: A COMPARISON OF STRUCTURE-LEARNING ALGORITHMS

Podofilini, Luca (Switzerland)¹; Dang, Vinh (Switzerland)¹; Panos, Evangelos (Switzerland)¹

1 - Paul Scherrer Institute

Session: AA1 – Aeronautics Aerospace Meeting room 9 - Level -1

Chairs

Mario P Brito

Fabio Augusto De Alcantara Andrade

Speaker

Affi, Nehal OC - (26557) - ANOMALY DETECTION FOR ELECTRO-HYDROSTATIC ACTUATORS USING LSTM AUTOENCODER

Affi, Nehal (Germany)¹; Elhendawi, Abdelmonem (France)²; Leitenberger, Felix (Germany)¹; Piat, Nadine (Germany)²; Matthiesen, Sven (Germany)¹

1 - Karlsruhe Institute of Technology; 2 - SUPMICROTECH-ENSMM

Qiu, Shumao OC - (27645) - A UQ BASED DYNAMIC SAFETY ASSESSMENT METHOD FOR CASCADING EFFECTS IN COMPLEX SYSTEMS

Peng, Wensheng (China)¹; Lan, Jiang (China)¹; Qiu, Shumao (China)¹; Wang, Junran (China)¹; Xue, Kai (China)¹; Lin, Cong (China)^{1,2}

1 - China Aero-Polytechnology Establishment; 2 - Aviation Key Laboratory of Science and Technology on Aero Combined Environment

Andrade, Fabio OC - (27675) - SAFETY IMPLICATIONS OF HUMAN READINESS LEVEL (HRL) IN DRONE-ASSISTED EMERGENCY RESPONSE OPERATIONS

Steen, Riana (Norway)¹; Andrade, Fabio (Norway)²; Hovenburg, Anthony (Norway)³

1 - University of Stavanger (UIS); 2 - Associate Professor Department of Microsystems Faculty of Technology, Natural Sciences and Maritime Sciences Campus Vestfold; 3 - Researcher Department of Microsystems Faculty of Technology, Natural Sciences and Maritime Sciences Campus Vestfold

Bassi, Federico OC - (27801) - PRELIMINARY APPLICATION OF IN-ORBIT MAINTENANCE FOR LEO SMALLSATS

Bassi, Federico (Italy)¹; Castoldi, Elisa (Italy)²; Fontanot, Francesco (Italy)²

1 - TMC spa; 2 - D-Orbit

Xu, Sheng OC - (27814) - ANALYSIS OF REGULATORY FOCUS IN MARITIME AUTONOMOUS SURFACE SHIPS (MASS)

Xu, Sheng (Norway)¹; Kim, Tae Eun (Norway)¹; Perdersen, Egil (Norway)¹

1 - UiT-The Arctic University of Norway

Session: AA9 – Land Transportation Meeting room 10 - Level -1

Chairs

Daniel Straub

Pierre Dersin

Speaker

Reif, Monika OC - (26443) - ASSURANCE FRAMEWORK FOR SAFE AND TRUSTWORTHY AI IN RAILWAY SYSTEMS

Reif, Monika (Switzerland)¹; Fernández Moguel, Leticia (Switzerland)¹; Müller, Manuel (Switzerland)¹; Brunner, Stefan (Switzerland)¹; Frischknecht-Gruber, Carrmen (Switzerland)¹; Kälin, Tommy Lee (Switzerland)¹; Rejzek, Martin (Switzerland)¹; Shin, Jiwon (Switzerland)²

1 - Institute of Applied Mathematics and Physics, ZHAW Zurich University of Applied Sciences; 2 - Stadler Signalling

Mcintosh, Angus OC - (27770) - CORRELATED INTERVAL ARITHMETIC ON CARBON DIOXIDE EMISSIONS CALCULATIONS IN ROAD-HAULAGE SCENARIOS

Mcintosh, Angus (United Kingdom)¹; Loayza Romero, Estefania (United Kingdom)¹; De Angelis, Marco (United Kingdom)¹

1 - University of Strathclyde

Evan, Samzun OC - (27869) - TOWARDS THE SAFE DEPLOYMENT OF GNSS-BASED LOCALISATION FOR AUTONOMOUS TRAINS: A PRELIMINARY HAZARD ANALYSIS

Evan, Samzun (France)¹; Joelle, Al-Hage (France)²; Mohamed, Sallak (France)²; Anis, Ziadi (France)¹

1 - Syntony GNSS; 2 - Université de Technologie de Compiègne, CNRS, Heudiasyc, France

Recta, Araaf OC - (27900) - A SYSTEMATIC APPROACH FOR FORMALISING AND VERIFYING HAZARDS TO SUPPORT ETCS MOVING BLOCK SAFETY ASSESSMENT

Recta, Araaf (France)¹; Beugin, Julie (France)¹; Saddem-Yagoubi, Rim (France)²; Ghazel, Mohamed (France)¹

1 - Univ. Gustave Eiffel; 2 - Aix Marseille Univ

Rene, Liskow OC - (28957) - CENSORED FIELD DATA: IMPACT AND CONSIDERATION ON RELIABILITY ANALYTICS IN PRODUCT LIFE CYCLE – A CASE STUDY ON LIGHT ELECTRIC VEHICLES

Rene, Liskow (Germany)¹; Leon, Hoffe (Germany)¹; Bracke, Stefan (Germany)¹

1 - Chair of Reliability Engineering and Risk Analytics, University of Wuppertal, Germany

Bracke, Stefan OC - (28958) - DEVELOPMENT OF INNOVATIVE AND RELIABLE TECHNICAL PRODUCTS: THE IMPACT OF HISTORICAL, EDUCATIONAL, AND SOCIAL INTERACTION ASPECTS ON RELIABILITY AND SAFETY ENGINEERING

Bracke, Stefan (Germany)¹; Tordeux, Antoine (Germany)¹; Inoue, Masato (Japan)²

1 - University of Wuppertal; 2 - Meiji University

15:30

16:00 Coffee break **Forum Braga Foyer - Level 0**

16:00

17:30 Parallel Sessions

Chairs

Michael Beer

Speaker

Soomro, Afzal Ahmed OC - (27731) - PROBABILISTIC RISK ASSESSMENT OF NUCLEAR POWER PLANT INTEGRATED HYDROGEN GENERATION: A COMPREHENSIVE LITERATURE REVIEW OF METHODS , MODELS AND DATA SOURCES

Soomro, Afzal Ahmed (Saudi Arabia)¹; Almomani, Belal (Saudi Arabia)¹; Shams, Afaq (Saudi Arabia)¹
1 - 1 Interdisciplinary Research Center for Industrial Nuclear Energy (IRC-INE), KFUPM, Dhahran, 31261, Saudi Arabia

Soeffker, Dirk OC - (27810) - BEYOND THE ETHICAL COMPASS: RELIABILITY CHALLENGES IN ADAPTIVE HUMAN-AI TEAMING

Soeffker, Dirk (Germany)¹; Shyshova, Olena (Germany)¹
1 - Chair of Dynamics and Control, University of Duisburg-Essen

Coetzer, Roelof OC - (27826) - DEVELOPMENT AND IMPLEMENTATION OF AN ONLINE INTEGRATED WELL INTEGRITY AND RISK ASSESSMENT MANAGEMENT PROCESS FOR ONSHORE GAS WELLS

Coetzer, Roelof (South Africa)¹; Nel, Gert (South Africa)¹; Koekemoer, Ockert (South Africa)¹; Liebenberg, Shawn (South Africa)¹
1 - North-West University

Gerasimov, Michail OC - (27855) - MULTIDIMENSIONAL RISK ANALYSIS IN CONDITIONS OF STOCHASTIC DATA HETEROGENEITY

Tyrsin, Alexander (Germany)¹; Gerasimov, Michail (Germany)¹; Beer, Michail (Germany)¹
1 - Institute for Risk and Reliability, Leibniz University Hannover

Zurek, Arkadiusz OC - (27877) - DEVELOPMENT OF THE M-UAV METHOD (METHOD FOR RESILIENCE ASSESSMENT OF UAV-AUTOID SYSTEMS) TOWARD EX ANTE RESILIENCE EVALUATION USING REINFORCEMENT LEARNING

Zurek, Arkadiusz (Germany)¹; Hinz, Marcin (Germany)²
1 - CASUS – Center for Advanced Systems Understanding, Helmholtz-Zentrum Dresden-Rossendorf e.V. (HZDR); 2 - Hochschule München University of Applied Sciences

Oussama, Adjoul OC - (27892) - ADVANCED COMPUTATIONAL ALGORITHMS FOR DESIGNING AND DYNAMICALLY MAINTAINING INDUSTRIAL SYSTEMS: AN NSGA-II ALGORITHM AND DISCRETE EVENT SIMULATION APPROACH.

Oussama, Adjoul (Algeria)¹; Khaled, Benfriha (France)²; Sif Eddine, Sadoui (Algeria)³; Brahim, Mahdinni (Algeria)³
1 - Mechanical Systems Design Laboratory, Ecole Militaire Polytechnique, Algiers, Algeria; 2 - Arts et Métiers; 3 - Laboratoire Des Techniques Avancées de Fabrication Et Contrôle, École Militaire Polytechnique, Bordj El-Bahri, 16111, Algiers, Algeria

Heide, Bjørnar OC - (29000) - RISK ACCEPTANCE CRITERIA Ersdal, Gerhard (Norway)¹; <u>Heide, Bjørnar</u> (Norway)¹ 1 - Norwegian Ocean Industry Authority
Luo, Ximing OC - (29111) - RISK ASSESSMENT AND SAFETY BARRIER IMPORTANCE MEASURE FOR MULTI-STATE ELECTROMECHANICAL SYSTEMS CONSIDERING COMPETING FAILURE MECHANISMS <u>Luo, Ximing</u> (China)¹; Jiao, Jian (China)¹; Jing, Yongfeng (China)¹; Yuan, Yuan (China)¹ 1 - School of Reliability and Systems Engineering, Beihang University, China

Session: AA12 – Natural Hazards **Grand Auditorium - Level 0**

Chairs

Patricia Mares Nasarre

Aud Marit Wahl

Speaker

Taarup-Esbensen, Jacob OC - (27688) - EMERGENCY PREPAREDNESS AND CRISIS MANAGEMENT IN THE HIGH ARCTIC

Taarup-Esbensen, Jacob (Denmark)¹; Kruke, Bjørn Ivar (Norway)²; Karlsen, Andre (Norway)³; Lund-Kordahl, Inger (Norway)³; Sætren, Gunhild Birgitte (Norway)⁴

1 - University College Copenhagen; 2 - University of Stavanger; 3 - University of Inland Norway; 4 - University Centre in Svalbard

Haavik, Torgeir Kolstø OC - (29023) - LOCAL KNOWLEDGE IN CLIMATE RELATED NATURAL HAZARDS

Haavik, Torgeir Kolstø (Norway)¹; Liste, Lucia (Norway)¹

1 - NTNU Social Research

Guerra-Medina, Daniel OC - (26065) - BIVARIATE COPULA MODELLING OF SIGNIFICANT WAVE HEIGHT TEMPORAL DEPENDENCE: A COMPARISON STUDY BETWEEN BUOY AND REANALYSIS DATA

Guerra-Medina, Daniel (Spain)^{1,2}; Rodríguez, Germán (Spain)^{1,2}; Mares-Nasarre, Patricia (Netherlands)³

1 - Departamento de Física, Universidad de Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain; 2 - Instituto Universitario de Estudios Ambientales y Recursos Naturales, Universidad de Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain; 3 - Department of Hydraulic Engineering, Delft University of Technology, 2628 CN Delft, the Netherlands

Mares-Nasarre, Patricia OC - (26084) - NON-STATIONARY ANALYSIS OF ICE BREAKUP DATE AT NENANA, ALASKA

Mares-Nasarre, Patricia (Netherlands)¹; Pearson, Stuart Grant (Netherlands)¹; Dunne, Kieran B. J. (Netherlands)¹; Lanzafame, Robert (Netherlands)¹

1 - Delft University of Technology

Wahl, Aud Marit OC - (26240) - MANIFESTATIONS OF SOCIETAL RESILIENCE IN LOCAL MANAGEMENT OF EXTREME EVENTS <u>Wahl, Aud Marit</u> (Norway)¹; Kongsvik, Trond (Norway)¹; Herrera, Ivonne (Norway)²; Haavik, Torgeir (Norway)² 1 - Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Norway; 2 - Studio Apertura, NTNU Social Research AS, Norway
De Albuquerque, Nicolas OC - (26382) - PROMOTING SAFETY: EMERGING PERSPECTIVES ON EMERGENCY PREPAREDNESS FOR URBAN NATURAL HAZARDS <u>De Albuquerque, Nicolas</u> (Brazil)¹; Da Silva, Lucas (Brazil)¹; Gardoni, Paolo (United States of America)²; Alencar, Marcelo (Brazil)¹; De Almeida, Adiel (Brazil)¹ 1 - Federal University of Pernambuco (UFPE); 2 - University of Illinois, Urbana-Champaign
Mukherjee, Sayanti OC - (26531) - ASSESSING HOW HOUSEHOLD CAPABILITIES AND WELL-BEING ARE DISRUPTED IN THE AFTERMATH OF WILDFIRES: A HUMAN-CENTERED MIXED METHODS APPROACH Roy, Poulomee (United States of America)¹; <u>Mukherjee, Sayanti</u> (United States of America)¹; Clark, Susan (United States of America)² 1 - Industrial and Systems Engineering, University at Buffalo, United States; 2 - Department of Environment & Sustainability, University at Buffalo, United States
Mukherjee, Sayanti OC - (26566) - AN INTEGRATED COUNTY-LEVEL COMMUNITY-AWARE ANALYTICS-DRIVEN RISK EVALUATION (CARE) INDEX FOR WILDFIRE EMERGENCY MANAGEMENT <u>Mukherjee, Sayanti</u> (United States of America)¹; Roy, Poulomee (United States of America)¹; Clark, Susan (United States of America)¹ 1 - State University of New York at Buffalo

SS-14: Artificial Intelligence, Meta-Modelling and Advanced Simulation for the Safety Analysis of Nuclear Systems **Congress Room 1 - Level 1**

Chairs

Nicola Pedroni

Francesco Di Maio

Speaker

Labeau, Pierre-Etienne SS - (26186) - ADVANCED NUCLEAR SAFETY ANALYSIS METHODOLOGY DEVELOPMENT BY INTEGRATING PROBABILISTIC AND DETERMINISTIC APPROACHES AND OPTIMIZING UNCERTAINTY CONSIDERATION

Yu, Shizhen (Belgium)¹; Zhang, Jinzhao (Belgium)²; Labeau, Pierre-Etienne (Belgium)¹

1 - Université libre de Bruxelles; 2 - Tractebel ENGIE

Pedroni, Nicola SS - (26228) - PROBABILISTIC ENSEMBLE OF STATISTICAL AND MACHINE LEARNING TECHNIQUES FOR THE DETECTION OF ABNORMAL CONDITIONS IN SAFETY-CRITICAL SYSTEMS:

APPLICATION TO THE SIMULATOR OF AN ADVANCED NUCLEAR REACTOR

Pedroni, Nicola (Italy)¹

1 - Politecnico di Torino

Kim, Jae Min SS - (26280) - FEATURE SELECTION FROM NORMAL OPERATION DATA IN NUCLEAR POWER PLANTS USING SHAPE-BASED CLUSTERING

Kim, Jae Min (Korea, Republic of)¹; Shin, Ji Hyeon (Korea, Republic of)¹; Koo, Seo Ryong (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Navarro Ponce, Enrique SS - (26283) - PREDICTIVE MODELING FOR HEALTH CONDITION AND RUL ESTIMATION IN CRITICAL EQUIPMENT OF NUCLEAR POWER PLANTS

Navarro Ponce, Enrique (Spain)¹; Martón Lluch, Isabel (Spain)²; Sánchez Galdón, Ana Isabel (Spain)²; Martorell Alsina, Sebastián Salvador (Spain)¹

1 - Dept. of Chemical and Nuclear Engineering, Camino de Vera, s/n, 46022, Valencia (MEDASEGI, Polytechnic University of Valencia); 2 - Dept. of Applied Statistics and Operations Research and Quality, Camino de Vera, s/n, 46022, Valencia (MEDASEGI, Polytechnic University of Valencia)

Choi, Sun Yeong SS - (26411) - EVALUATION OF HUMAN ERROR PROBABILITY CONSIDERING MAIN CONTROL BOARD FIRE IN THE MAIN CONTROL ROOM OF A NUCLEAR POWER PLANT

Choi, Sun Yeong (Korea, Republic of)¹; Kang, Dae Il (Korea, Republic of)¹; Jung, Yong Hun (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Shin, Ji Hyeon SS - (26415) - A BIAS-REDUCING FRAMEWORK FOR ENHANCING TRUSTWORTHINESS OF AI-BASED OPERATOR SUPPORT MODELS IN NUCLEAR POWER PLANTS

Shin, Ji Hyeon (Korea, Republic of)¹; Koo, Seo Ryong (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Sampath, Ramprasad SS - (26416) - MULTI ROOM LAYOUT COMPARTMENT FIRE HAZARD ANALYSIS WITH CFAST AND FDS FOR A SMALL MODULAR REACTOR

Sampath, Ramprasad (United States of America)¹; Georgiev, Georgi (United Kingdom)²

1 - Centroid LAB; 2 - Newcleo

Moon, Hyunsu SS - (26455) - HYBRID ANN-BASED APPROACH FOR SYSTEM FRAGILITY ESTIMATION IN SEISMIC RISK ASSESSMENT OF NUCLEAR POWER PLANTS

Moon, Hyunsu (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Speaker

Cardoso, Moacyr OC - (27775) - SYSTEMIC FAILURE IN THE VLS-1 ROCKET LAUNCH ACCIDENT: A CAST PERSPECTIVE.

Von Buren, Henri (Brazil)¹; Vaz, Bruno (Brazil)¹; Cardoso, Moacyr (Brazil)¹

1 - Technological Institute of Aeronautics

Zarghooni-Hoffmann, Sasan OC - (27853) - DISTINGUISHING BETWEEN ACCIDENTAL DEATHS AND SUICIDES IN RAILWAY INFRASTRUCTURE

Zarghooni-Hoffmann, Sasan (Norway)¹

1 - University of Stavanger

Mensah, Emmanuel OC - (27866) - A CONCEPTUAL FRAMEWORK FOR HUMAN RELIABILITY ASSESSMENT IN INDUSTRIAL EXOSKELETON-ASSISTED TASKS

Mensah, Emmanuel (Poland)¹; Giel, Robert (Poland)¹; Werbinska-Wojciechowska, Sylwia (Poland)¹

1 - Wroclaw University of Science and Technology

Han, Ruoran OC - (27883) - MAPPING PRODUCTION STANDARDS TO PRODUCT RELIABILITY IN MANUFACTURING: A MODELING FRAMEWORK

Jia, Bo (China)²; Sun, Mu-Xia (China)¹; Guo, Mengyu (China)¹; Lan, Jiang (China)²; Han, Ruoran (China)³

1 - Department of Industrial Engineering, Tsinghua University; 2 - China Aviation Comprehensive Technology Institute; 3 - Beihang University

Ouertani, Aymen OC - (27912) - ADAPTIVE AI-DRIVEN RELIABILITY MODELING: AN LLM-SUPPORTED FRAMEWORK FOR DYNAMIC FITTING OF FAILURE DISTRIBUTIONS IN SAFETY-CRITICAL AUTOMOTIVE SYSTEMS

Krini, Abderrahim (Germany)¹; Ouertani, Aymen (Germany)²

1 - Technische Hochschule Ostwestfalen-Lippe; 2 - Robert Bosch GmbH

Kouroukli, Anna OC - (27923) - ESTIMATION FOR FUNCTIONALS IN RENEWAL MODELS AND APPLICATIONS

Kouroukli, Anna (Greece)¹

1 - University of Piraeus

Nejjar, Ismail OC - (29029) - SCALABLE POWER GRID VULNERABILITY ANALYSIS: GENERALIZING TO LARGE NETWORKS WITH GRAPH-BASED REINFORCEMENT LEARNING

Nejjar, Ismail (Switzerland)¹; Fink, Olga (Switzerland)¹

1 - IMOS, EPFL, Switzerland

Session: AA5 – Critical Infrastructures **Congress Room 3 - Level 1**

Chairs

Matteo Spada

Blazhe Gjorgiev

Speaker

Hassel, Henrik OC - (26593) - SECURITY OF SUPPLY IN SWEDISH DISTRICT HEATING SECTOR: INSIGHTS FROM AN INTERVIEW STUDY

Lantz, Emelie (Sweden)³; Raquette, Tove (Sweden)³; Hassel, Henrik (Sweden)^{1,2}; Sernhed, Kerstin (Sweden)⁴; Dannbring, Peter (Sweden)⁵

1 - Division of risk management and societal safety, Lund University; 2 - Lund University Center for Preparedness and Resilience (LUPREP); 3 - AFRY; 4 - Department of energy sciences, Lund University; 5 - DHC advisory

Lichte, Daniel (Sankt Augustin) OC - (26077) - CRITICAL INFRASTRUCTURE DEPENDENCIES: A NETWORK ANALYSIS BASED ON EXPERT KNOWLEDGE

Krieger, Nina (Germany)¹; Halekotte, Lukas (Germany)¹; Lichte, Daniel (Germany)¹

1 - German Aerospace Center (DLR), Institute for the Protection of Terrestrial Infrastructures

Majri, Sarra OC - (26247) - THREATS BASED ON CIVIL AIRBORNE DRONES: DEVELOPING AND ANALYZING SCENARIOS FOR PORTS

Majri, Sarra (Germany)¹; Sill Torres, Frank (Germany)¹; Stockbrügger, Jan (Germany)¹

1 - German Aerospace Center

Matthei, Jonathan OC - (27677) - MODEL-BASED PUBLIC PARTICIPATION USING OPEN DATA EXCHANGE FORMATS

Matthei, Jonathan (Germany)¹; Hoffmann, Thomas (Germany)²; Wischum, Maurice (Germany)¹; Mackenbach, Sven (Germany)¹; Klemt-Albert, Katharina (Germany)¹

1 - Chair and Institute of Construction Management, Digital Engineering and Robotics in Construction, RWTH Aachen University, Germany; 2 - albert.ing GmbH, Germany

Xavier, Melwin OC - (27820) - FROM ANOMALIES TO ACTIONABLE INSIGHTS: AI AGENTIC WORKFLOWS FOR PREDICTIVE MAINTENANCE IN DRILL-RIG OPERATIONS

Xavier, Melwin (Sweden)¹; Karim, Ramin (Sweden)¹

1 - Luleå tekniska universitet, Sweden

Xavier, Melwin OC - (27823) - UNLOCKING MAINTENANCE DARK DATA WITH EMBEDDING-BASED SEMANTIC SEARCH

Xavier, Melwin (Sweden)¹; Karim, Ramin (Sweden)¹

1 - Department of Civil, Environmental and Natural Resources Engineering, Lulea University of Technology, Sweden

Rahadiano, Haris OC - (26152) - MODEL FOR INTERDEPENDENT CRITICAL FLOWS: ADDRESSING CROSS-SECTORAL VULNERABILITY

Rahadiano, Haris (Sweden)¹; Johansson, Jonas (Sweden)¹

1 - Division of Risk Management and Societal Safety, LTH, Lund University

Latzenhofer, Martin OC - (26237) - DESIGNING RESILIENT EMS OPERATIONS: A BUSINESS CONTINUITY PERSPECTIVE ON IMPACTFUL EMERGENCY MEDICAL RESPONSE Bürger, Bernhard (Austria)¹; Anwar, Talha (Austria)¹; <u>Latzenhofer, Martin</u> (Austria)¹; Schauer, Stefan (Austria)¹ 1 - AIT Austrian Institute of Technology GmbH
Latzenhofer, Martin OC - (26252) - DAGMAR: A KNOWLEDGE-DRIVEN FRAMEWORK FOR ENHANCING SUPPLY CHAIN RESILIENCE Andresel, Medina (Austria)¹; <u>Latzenhofer, Martin</u> (Austria)¹; Liakhovets, Daria (Austria)¹; Schlarb, Sven (Austria)¹ 1 - Austrian Institute of Technology

Session: MA5 – Maintenance Modeling and Applications **Congress Room 4 - Level 1**

Chairs

María Inmaculada Torres Castro

Grall Antoine

Speaker

Heinzle, Tobias OC - (26595) - DATA-DRIVEN CALIBRATION OF WIND FARM O&M MODELS
Heinzle, Tobias (Germany)¹; Straub, Daniel (Germany)¹
 1 - Technical University of Munich

Zhang, Qi OC - (26601) - OPTIMIZATION OF WIND TURBINE MAINTENANCE AND PRODUCTION CONTROL BASED ON MARKOV DECISION PROCESS
Zhang, Qi (China)¹; Zhu, Wenjin (China)¹; Duan, Dongli (China)¹; Béranguer, Christophe (France)²
 1 - Northwestern Polytechnical University; 2 - GIPSA-lab, Université Grenoble Alpes, CNRS, Grenoble INP

Casalta, Mariana OC - (27713) - AN OPTIMISATION APPROACH FOR PREVENTIVE MAINTENANCE OF WATER UTILITY PUMPING STATIONS: A PORTUGUESE CASE STUDY
Casalta, Mariana (Portugal)¹; De Jonge, Bram (Netherlands)²; Veldman, Jasper (Netherlands)²; Barbosa, Flávia (Portugal)^{3,4}; Camanho, Ana S. (Portugal)¹; Silva, Gabriel (Portugal)⁵
 1 - Faculty of Engineering of the University of Porto; 2 - Department of Operations, Faculty of Economics and Business, University of Groningen; 3 - INESCT TEC; 4 - Faculty of Economics of the University of Porto; 5 - Águas do Douro e Paiva, S.A.

Grall, Antoine OC - (27754) - LIMITED MEMORY INFLUENCE DIAGRAM FRAMEWORK FOR MODELING CONDITION-BASED MAINTENANCE FOR A SYSTEM SUBJECTED TO DEGRADATION
 Tayouri, Shabnam (France)¹; Mosayebi Omshi, Elham (France)¹; Grall, Antoine (France)¹
 1 - LIST3N-MSAD, Université de Technologie de Troyes, Troyes, France

Semwogerere, David OC - (27827) - SUBSEA TREE VALVE INSPECTION AND MAINTENANCE OPTIMIZATION USING VARYING INSPECTION INTERVALS <u>Semwogerere, David</u> (Norway)¹; Vatn, Jørn (Norway)¹; Sangesland, Sigbjørn (Norway)¹ 1 - Norwegian University of Science and Technology
Hefele, Theresa OC - (28969) - INVESTIGATING THE SIM-TO-REAL GAP IN INFRASTRUCTURE MAINTENANCE PLANNING <u>Hefele, Theresa</u> (Germany)¹; Straub, Daniel (Germany)¹ 1 - Technical University of Munich

Session: AA3 – Civil Engineering **Congress Room 5 - Level 1**

Chairs

Danko Jerez

Joaquim Tinoco

Speaker

Biju-Duval, Paul OC - (27829) - RELIABILITY ASSESSMENT OF MULTI-SPAN MASONRY ARCH BRIDGES CONSIDERING GEOMETRICAL UNCERTAINTIES

Biju-Duval, Paul (United Kingdom)¹; Cabanzo, Carlos (Portugal)²; Santamaria-Ariza, Monica (Portugal)²; Akiyama, Mitsuyoshi (Japan)³; Lourenço, Paulo B. (Portugal)²; Matos, José C. (Portugal)²

1 - LUSAS; 2 - Universidade do Minho; 3 - Waseda University

Jerez, Danko OC - (27907) - OPTIMAL OPERATION OF PUMPS IN WATER DISTRIBUTION NETWORKS WITH TIME-VARYING UNCERTAIN DEMANDS

Jerez, Danko (Chile)¹; Jensen, Hector (Chile)¹

1 - Federico Santa Maria Technical University

Jiponov, Alexander (Sofia) OC - (27918) - ENHANCING INFRASTRUCTURE RESILIENCE THROUGH EMERGENCY BRIDGE RECONSTRUCTION: LESSONS FROM THE 2023 TSAREVO FLOODS

Jiponov, Alexander (Bulgaria)¹

1 - University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria

Murati, Ylli OC - (29042) - FROM MULTI-SOURCE MONITORING TO TRUSTWORTHY DECISIONS: HYBRID AI–PHYSICS STATE-SPACE MODELS FOR TRANSPORTATION INFRASTRUCTURE

Murati, Ylli (Portugal)¹; Tinoco, Joaquim (Portugal)¹; Matos, Luis (Portugal)¹; Magalhães, Luis (Portugal)¹; Matos, Jose (Portugal)¹

1 - University of Minho, ISE, ARISE, Department of Civil Engineering, Guimarães, Portugal

Komary, Mahyad OC - (30369) - A REVIEW ON AFFORDABLE CORROSION MONITORING SYSTEMS AND SYSTEM DEVELOPMENT

Komary, Mahyad (Spain)¹; Komarizadehasl, Seyedmilad (Spain)¹; Tošić, Nikola (Spain)¹; Turmo, Jose (Spain)¹

1 - Universitat Politècnica de Catalunya (UPC)

Remenyte-Prescott, Rasa OC - (26206) - A PETRI NET APPROACH TO RELIABILITY AND DEGRADATION MODELLING IN A PEM ELECTROLYSER

Ubale, Salim (United Kingdom)¹; Remenyte-Prescott, Rasa (United Kingdom)¹; Grant, David (United Kingdom)¹; Stuart, Alastair (United Kingdom)¹; Hague, Adam (United Kingdom)²

1 - University of Nottingham; 2 - ITM Power

SS-06: Physics-Informed Machine Learning for Reliability, Availability, Maintainability and Safety (RAMS)

Meeting room 6 - Level -1

Chairs

Ismail Nejjar

Piero Baraldi

Speaker

Hinz, Marcin SS - (26386) - PHYSICS-INFORMED GRAPH NEURAL NETWORKS FOR STRESS PREDICTION IN WELDED STRUCTURES

Pürner, Lukas (Germany)¹; Kling, Maximilian (Germany)¹; Rother, Klemens (Germany)¹; Hinz, Marcin (Germany)¹

1 - Munich University of Applied Sciences

Bigouraux, Quentin SS - (26407) - PHYSICS-INFORMED MACHINE LEARNING FOR LI-ION BATTERY STATE OF HEALTH FORECASTING VIA DEGRADATION MODES

Bigouraux, Quentin (Portugal)¹; Heiries, Vincent (Portugal)¹; Aloui, Saifeddine (Portugal)¹; Laurin, Antoine (Portugal)¹; Chandesris, Marion (Portugal)¹

1 - CEA

Kathleen, Pele SS - (27777) - HYBRID WAVELET-KOHONEN METHOD FOR AUTOMATIC ANOMALY DETECTION IN THE TELERAY RADIOLOGICAL MONITORING NETWORK

Kathleen, Pele (Portugal)¹

1 - Autorisé de sûreté nucléaire et de radioprotection (ASNR)

Liu, Jie SS - (28955) - FATIGUE LIFE PREDICTION OF CABLEWAY WIRE ROPE: INTEGRATING STRESS ANALYSIS & GRADIENT BOOSTING REGRESSION TREE

Sun, Muxia (China)^{1,2}; Zhao, Fei (China)³; Liu, Jie (China)⁴

1 - Department of Industrial Engineering, Tsinghua University, Beijing, 100084, China; 2 - Institute for Quality and Reliability, Tsinghua University, Beijing, 100084, China; 3 - School of Business Administration, Northeastern University, Shenyang, China; 4 - Beihang University

Wang, Zirong SS - (30221) - A FOUNDATION-STYLE LITHIUM-ION BATTERY DEGRADATION MODEL WITH VARYING OPERATING-CONDITION ADAPTATION

Wang, Zirong (China)¹; Chen, Zhen (China)¹; Pan, Ershun (China)¹

1 - Department of Industrial Engineering and Management, Shanghai Jiao Tong University

SS-05: Explainable Artificial Intelligence (XAI) and Causal Modeling for Reliability, Availability, Maintainability and Safety (RAMS) **Meeting room 7 - Level -1**

Chairs

Ruixue Li

Junyong Bae

Speaker

Cassidy, Maria SS - (26271) - TRUSTWORTHY DISTRIBUTION NETWORK ASSESSMENT USING A CAUSAL-GUIDED DIFFUSION MODEL OF SYNTHETIC RESIDENTIAL LOAD PROFILES

Cassidy, Maria (Portugal)¹; Stephen, Bruce (Portugal)¹; Brown, Blair (Portugal)¹; Lu, Junyi (Portugal)¹; Mcarthur, Stephen (Portugal)¹

1 - University of Strathclyde

Li, Ruixue SS - (26175) - TOWARD KNOWLEDGE-AUGMENTED GRAPH NEURAL NETWORKS FOR EXPLAINABLE ROOT CAUSE ANALYSIS: A MULTILEVEL FLOW MODELING APPROACH

Li, Ruixue (United States of America)¹; Groth, Katrina M. (United States of America)¹

1 - University of Maryland, College Park

Bae, Junyong SS - (26494) - FEATURE SPACE MEMORY BANKS FOR EXAMPLE-BASED MODEL EXPLANATION IN SAFETY-CRITICAL APPLICATIONS

Bae, Junyong (Korea, Republic of)¹; Lee, Seung Jun (Korea, Republic of)¹

1 - Ulsan National Institute of Science and Technology (UNIST)

Fouladirad, Mitra SS - (26543) - EXPLAINABLE AUTOMATED MACHINE LEARNING FAILURE CAUSALITY DIAGNOSTIC AND PROGNOSTIC IN INDUSTRIAL SYSTEMS

Fouladirad, Mitra (Portugal)²; Misaii, Hasan (Portugal)¹; Hlunguane, José Alcebâdes Ernesto (Portugal)³

1 - University of Tehran; 2 - Ecole Centrale Marseille, Marseille, France; 3 - University of Eduardo Mondlane

Han, Ruoran SS - (28971) - EXPLAINABLE FAULT DIAGNOSIS DRIVEN BY MAINTENANCE EXPENDITURE IN POWER SYSTEMS

Han, Ruoran (China)^{1,2}; Liu, Jie (China)^{1,2}

1 - Beihang University; 2 - Huairou Laboratory

Zheng, Shuwen SS - (28973) - LEVERAGING CAUSAL INFERENCE FOR SYSTEM FAULT DIAGNOSIS IN INCREMENTAL OPERATING CONDITIONS

Zheng, Shuwen (China)^{1,2}; Chen, Yunxia (China)¹; Liu, Jie (China)¹; Zio, Enrico (Italy)²

1 - Beihang University; 2 - Polytechnic of Milan

SS-33: Advances in risk management of critical infrastructure systems **Meeting room 8 - Level -1**

Chairs

José António Silva De Carvalho Campos E Matos

Andrea Tarazona

Speaker

Tarazona, Andrea SS - (26198) - SIMPLIFICATIONS FOR DECISION-MAKING ON BRIDGE PORTFOLIOS: CURRENT DEVELOPMENTS AND FUTURE RESEARCH DIRECTIONS

Tarazona, Andrea (Portugal)¹; Adey, Brya T. (Switzerland)²; Santamaría-Ariza, Mónica (Portugal)¹;

Matos, José (Portugal)¹

1 - University of Minho; 2 - ETH University

Cabanzo, Carlos SS - (27674) - A BIBLIOMETRIC ANALYSIS OF STOCHASTIC METHODS IN MASONRY ARCH BRIDGE ASSESSMENTS

Cabanzo, Carlos (Portugal)¹; Santamaria-Ariza, Monica (Portugal)¹; Akiyama, Mitsuyoshi (Portugal)²; Lourenço, Paulo (Portugal)¹; Matos, José (Portugal)¹

1 - University of Minho, Portugal; 2 - Waseda University, Japan

Tola, Sinem SS - (27714) - RAILWAY BRIDGE SCOUR DETECTION USING DRIVE-BY TRACK PROFILES AND MACHINE LEARNING ALGORITHMS

Tola, Sinem (Portugal)¹; Tinoco, Joaquim (Portugal)¹; O'brien, Eugene (Portugal)²; Matos, José António (Portugal)¹

1 - University of Minho, ISISE, ARISE, Department of Civil Engineering, Guimarães, Portugal; 2 - University College Dublin, School of Civil Engineering, Dublin, Ireland

Buelvas Moya, Homer Armando SS - (27835) - MAPPING STRUCTURAL DEFORMATION ON BRIDGES USING INSAR DATA AND DIGITAL TWIN FOR DISASTER RISK MANAGEMENT IN THE FUTURE: A REVIEW
Buelvas Moya, Homer Armando (Portugal)^{1,2}

1 - Institute for Sustainability and Innovation in Structural Engineering (ISISE); 2 - University of Minho

Ren, Xin SS - (27905) - DIGITALIZATION OF MARITIME PORTS' ENERGY INFRASTRUCTURES: EMERGING RISKS MAPPED THROUGH BIBLIOMETRIC ANALYSIS.

Ren, Xin (Portugal)¹; Daniel, Emmanuel (Portugal)²; Makokha, Augustine (Portugal)³

1 - THOST Project Management The Netherlands B.V.; 2 - School of Architecture, Computing and Engineering, Faculty of Science and Engineering, University of Wolverhampton.; 3 - Department of Mechanical, Production & Energy Engineering, Moi University.

Workshop - Practical Tools and Techniques for Assessing and Preventing Human Error in Safety- and Quality-Critical Systems

16:00

17:30 **Poster Session** Forum Braga Foyer - Level -1

Speaker

Mccann, Matthew PO - (26374) - A ZONOTOPIC REPRESENTATION OF IMPRECISE REGRESSION AND ITS EFFECTS ON COMPUTATIONAL COST

Mccann, Matthew (United Kingdom)¹; De Angelis, Marco (United Kingdom)¹

1 - University of Strathclyde

Tubis, Agnieszka A. PO - (27757) - A RISK ASSESSMENT AND CLASSIFICATION FRAMEWORK FOR THE MILITARY CLOTHING SUPPLY CHAIN

Tubis, Agnieszka A. (Poland)¹; Świerczek, Justyna (Poland)¹

1 - Wroclaw University of Science and Technology

Pinto Gonçalves Filho, Anastacio PO - (27648) - SAFETY CULTURE IN GAS COMPANIES: A CASE STUDY OF AN LPG RESELLER NETWORK

Gomes Mendes, Allen Greyson (Brazil)¹; Pinto Gonçalves Filho, Anastacio (Brazil)¹

1 - UNIVERSIDADE FEDERAL DA BAHIA

Song, Zicheng PO - (26447) - A CNN-BASED COGNITIVE EMOTION COMPUTING METHOD

Song, Zicheng (China)¹; Zhou, Dong (China)¹

1 - Beihang University

Huang, Pu PO - (26507) - A PHYSICS-INFORMED DEEP LEARNING FRAMEWORK FOR CREATING AND UPDATING DIGITAL TWINS: APPLICATION ON ROBOT FAULT DIAGNOSIS

Huang, Pu (France)¹; Liang, Xiaochun (France)²; Zeng, Zhiguo (France)¹; Barros, Anne (France)¹

1 - Laboratoire Génie Industriel, CentraleSupélec - Université Paris-Saclay; 2 - IDMC, Université de Lorraine

Tang, Shuaiwen PO - (26179) - A RISK ASSESSMENT MODEL OF COMPLEX SYSTEMS BASED ON EVIDENTIAL REASONING RULE WITH DEPENDENT EVIDENCE

Tang, Shuaiwen (China)¹; Jiang, Ping (China)¹; Yu, Haiyue (China)¹

1 - National University of Defense Technology

Kim, Jihyeon PO - (28987) - UTILIZATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES FOR INNOVATIVE SMRS

Kim, Jihyeon (Korea, Republic of)¹

1 - Innovative Small Modular Reactor Development Agency

Liu, Yuhan PO - (29019) - RESEARCH ON THE CONSTRUCTION OF SUPPORT EFFECTIVENESS
PARAMETER SYSTEM AND MODEL

Liu, Yuhan (China)¹

1 - China Aerospace Standardization Institute

Steckhan, Nico PO - (26095) - RELIABILITY OF A DEEP LEARNING BASED EARLY WARNING SYSTEM FOR
TABLE MILLING SAFETY

Wolny, Franziska (Germany)¹; Busch, Philipp (Germany)²; Steckhan, Nico (Germany)¹; Bhardwaj,
Atmika (Germany)¹; Prajapati, Krutarth (Germany)¹; Hassan, Muhammad Aziz (Germany)¹; Eigenbrod,
Hartmut (Germany)²; Birenbaum, Christoph (Germany)²; Vock, Silvia (Germany)¹

1 - Federal Institute for Occupational Safety and Health (BAuA), Germany; 2 - Fraunhofer Institute for
Manufacturing Engineering and Automation IPA, Germany

Han, Lin PO - (27830) - ROBUST DESIGN OF ELECTRON BEAM WELDING PROCESS FOR THE
COMPRESSOR CASING OUTER

Han, Lin (China)¹; Huang, Min (China)¹; Hu, Weihan (China)²; Xia, Guangwei (China)²; Liu, Xuejun
(China)¹

1 - Beihang University; 2 - AECC Hunan Aviation Powerplant Research Institute

Mu, Hongxu PO - (27796) - PROBABILISTIC ASSESSMENT OF COMPONENT-SPECIFIC SEISMIC
SENSITIVITY IN RAILWAY BRIDGES UNDER LOCAL SCOUR

Mu, Hongxu (Portugal)¹; C. Matos, Jose (Portugal)¹; Dang, Ngoc Son (Portugal)¹

1 - School of Civil Engineering, University of Minho, Portugal

Van Wassenhove, Wim PO - (26147) - BETWEEN STRUCTURE AND MEANING : ENABLING
TRANSFORMATION IN SAFETY MANAGEMENT

Foussard, Christian (United States of America)¹; Ellias, Baptiste (United Arab Emirates)²; Van
Wassenhove, Wim (France)¹; Denis-Remis, Cedric (France)¹; Morand, Antoine (France)³

1 - IHEIE, Mines Paris; 2 - Dupont Safety Solutions; 3 - Geoquest - Vinci

Song, Zicheng PO - (28999) - A CNN-BASED COGNITIVE EMOTION RECOGNITION METHOD

Song, Zicheng (China)¹; Zhao, Jinlong (China)²; Zhao, Dong (China)¹; An, Xu (China)¹; Shuai, Songliang
(China)¹; Guo, Ziyue (China)³

1 - School of reliability and system engineering, Beihang University; 2 - China North Vehicle Research
Institute; 3 - School of Computer Science and Engineering, Beihang University

Hu, Chaohui PO - (24052) - RESEARCH ON THE MATURITY EVALUATION MODEL OF RELIABILITY
ENGINEERING CAPABILITY

Hu, Chaohui (China)¹; Hou, Weiguo (China)¹

1 - China Electronic Product Reliability and Environmental Testing Research Institute

Farokhi, Raheleh PO - (29120) - IDENTIFYING RISK INFLUENCING FACTORS RELATED TO ALTERNATIVE
FUELS IN WINTER NAVIGATION

Farokhi, Raheleh (Finland)¹; A. Valdez Banda, Osiris (Finland)¹; Barzehkar, Mojtaba (Finland)¹; Yeganeh Khaksar, Reza (Finland)¹

1 - Aalto university

Colim, Ana Cristina PO - (27759) - TOWARDS AN ERGONOMIC ASSESSMENT IN COLLABORATIVE ROBOTIC SYSTEMS: FROM EMPIRICAL INSIGHTS TO FRAMEWORK DEVELOPMENT

Cardoso, André (Portugal)¹; Bicho, Estela (Portugal)²; Braga, Ana Cristina (Portugal)²; Colim, Ana Cristina (Portugal)¹

1 - Associação Laboratório em Transformação Digital - DTX; 2 - University of Minho

Yousofizinsaz, Ghazaleh PO - (26243) - PROBABILISTIC DIGITAL TWIN FRAMEWORK FOR THE MANAGEMENT OF A PRESTRESSED BEAM & SLAB BRIDGE

Yousofizinsaz, Ghazaleh (Ireland)¹; Hanley, Ciarán (Ireland)²

1 - Civil, Structural and Environmental Engineering, School of Engineering and Architecture, University College Cork, Ireland.; 2 - Civil, Structural and Environmental Engineering, School of Engineering and Architecture, University College Cork, Ireland

Noh, Hyonjeong PO - (26213) - FUNCTIONAL SAFETY AND SIL VERIFICATION FOR AN OFFSHORE ELECTROCHEMICAL AMMONIA PROCESSES UNDER INTERMITTENT WIND POWER

Noh, Hyonjeong (Korea, Republic of)¹; Kang, Kwangu (Korea, Republic of)¹; Lee, Jung-Hee (Korea, Republic of)¹

1 - Korea Research Insitute of Ships and Ocean Engineering

Wang, Xueqi PO - (26369) - ROOM-TEMPERATURE CH₄ SENSING USING MOF-DERIVED CO₃O₄ FOR RELIABLE SAFETY MONITORING IN INDUSTRIAL ENVIRONMENTS

Wang, Xueqi (China)¹; Hong, Yu (China)¹; Hou, Yujie (China)¹

1 - CNPC research institute of safety and environment technology

Alexandra Rodrigues, Matilde PO - (27628) - APPLICATION OF THE FUNCTIONAL RESONANCE ANALYSIS METHOD (FRAM) TO UNDERSTAND MAINTENANCE ACTIVITIES IN THE CONTEXT OF OCCUPATIONAL SAFETY AND HEALTH

Gouveia, Mário (Portugal)¹; Afonso-Fernandes, Joana (Portugal)^{1,2}; Alexandra Rodrigues, Matilde (Portugal)^{1,2}

1 - Center for Translational Health and Medical Biotechnology Research/Health Research Network (RISE-Health), E2S, Polytechnic Institute of Porto, Porto, Portugal; 2 - Algoritmi Centre, University of Minho, Guimarães, Portugal

Alexandra Rodrigues, Matilde PO - (27629) - FROM INCIDENTS TO ADAPTATIONS: ENHANCING ORGANIZATIONAL LEARNING THROUGH RESILIENCE ENGINEERING

Afonso-Fernandes, Joana (Portugal)^{1,2}; Arezes, Pedro (Portugal)²; Alexandra Rodrigues, Matilde (Portugal)^{1,2}

1 - a) Center for Translational Health and Medical Biotechnology Research/Health Research Network (RISE-Health), E2S, Polytechnic Institute of Porto, Porto, Portugal; 2 - b) Algoritmi Centre, University of Minho, Guimarães, Portugal

Bae, Gwonje PO - (27700) - DEVELOPMENT OF A MULTI-LAYERED RISK MAPPING-BASED VISUAL RISK ASSESSMENT TOOL <u>Bae, Gwonje</u> (Korea, Republic of)¹ 1 - ADD(Agency for Defense Development)
No, Seong Eun PO - (27706) - INTEGRATING WORKER TENURE INTO RISK ASSESSMENT: TOWARD A HUMAN-CENTERED SAFETY FRAMEWORK <u>No, Seong Eun</u> (Korea, Republic of)¹ 1 - Agency for Defense Development(ADD)
Lee, Seung-Youl PO - (27748) - EVALUATION OF EFFECTIVE SHIELDING STRATEGIES TO REDUCE AIRBORNE RADON IN OCCUPATIONAL ENVIRONMENTS <u>Lee, Seung-Youl</u> (Korea, Republic of)¹; Kwon, Oh-Joong (Korea, Republic of)¹; Lee, Hyo-Joo (Korea, Republic of)¹; Kim, Yong-Rok (Korea, Republic of)¹; Son, Hak-Woo (Korea, Republic of)¹; Ji, Seung-Joo (Korea, Republic of)¹; Shim, Eun-Ah (Korea, Republic of)¹; Yun, Yong-Hoon (Korea, Republic of)¹; Kim, Bong-Soo (Korea, Republic of)¹ 1 - Safety & Health Management Division, Korea Agency for Defence Development
Ferreira, Jose PO - (27735) - GROUNDING THREAT-AGNOSTIC RESILIENCE STRESS TESTING: A TOOLKIT FOR SYSTEM DEFINITION AND STAKEHOLDER MAPPING Palma-Oliveira, José (Portugal)¹; Rosa, Beatriz (Portugal)¹; Sarroeira, Ana (Portugal)¹; Antunes, Dalila (Portugal)¹; Trump, Benjamin (United States of America)¹; <u>Ferreira, Jose</u> (Portugal)¹ 1 - Factor Social
Wang, Zhe PO - (26594) - UNCERTAINTY-AWARE DOMAIN GENERALIZATION FOR WIND TURBINE DIAGNOSTICS <u>Wang, Zhe</u> (Germany)¹; Straub, Daniel (Germany)¹ 1 - Technical University of Munich
Azubuike, Chibuike PO - (27818) - COUNTERFACTUAL EXPLANATIONS FOR MACHINE LEARNING-BASED RESILIENCE ASSESSMENT OF CIVIL INFRASTRUCTURE <u>Azubuike, Chibuike</u> (Italy)¹ 1 - University of Padova
Vega Villamizar, Silvia Camila PO - (28962) - DEVELOPMENT OF AN EXPERIMENTAL REDUCED-SCALED SEGMENTAL BOX-GIRDER BRIDGE PROTOTYPE FOR STRUCTURAL HEALTH MONITORING RESEARCH <u>Vega Villamizar, Silvia Camila</u> (Colombia)¹; Viviescas Jaimes, Alvaro (Colombia)¹; Gisbert Domenech, Carlos Miguel (Spain)² 1 - industrial university of santander; 2 - Universitat Politècnica de València

Kruke, Bjørn Ivar PO - (26421) - DEVELOPMENT OF EMERGENCY PREPAREDNESS WORK IN SCHOOLS-CHALLENGES AND POSSIBILITIES

Steiro, Trygve (Norway)¹; Torgersen, Glenn- Egil (Norway)²; Kruke, Bjørn Ivar (Norway)³

1 - NTNU; 2 - University of South-Eastern Norway; 3 - University of Stavanger

An, Xu PO - (26419) - A METHODOLOGY OF LARGE LANGUAGE MODEL-DRIVEN DYNAMIC BAYESIAN NETWORK FOR RISK ANALYSIS OF AIRCRAFT ACCIDENTS

An, Xu (China)^{1,2,3}; Zhou, Dong (China)^{1,2,3}; Guo, Ziyue (China)^{1,2,4}; Lu, Chen (China)^{1,2,3}

1 - State Key Laboratory of Virtual Reality Technology and Systems, Beihang University, Beijing, China; 2 - State Key Laboratory of Reliability and Environmental Engineering Technology, Beihang University, Beijing, China; 3 - School of Reliability and Systems Engineering, Beihang University, Beijing, China; 4 - School of Computer Science and Engineering, Beihang University, Beijing, China

Paolucci, Federico PO - (27806) - PROTOTYPE OF A MULTI-AGENT ARCHITECTURE FOR REAL-TIME MONITORING OF PERSONAL PROTECTIVE EQUIPMENT USING AN RFID-BASED SMART GATE

Paolucci, Federico (Italy)²; Bosetti, Paolo (Italy)¹; Truffarelli, Tiberio (Italy)²; Marsili, Roberto (Italy)²; Araujo, Anna Carla (France)³; Rossi, Gianluca (Italy)²

1 - Department of Industrial Engineering, University of Trento; 2 - Department of Engineering, University of Perugia; 3 - Institut Clément Ader, Université Toulouse III – Paul Sabatier

Rodrigues, Matilde PO - (26089) - AI-BASED MODEL FOR MONITORING FIREFIGHTER WORK CAPACITY AND WORKLOAD USING BIOSIGNALS

Rodrigues, Matilde (Portugal)¹; Melo, Pedro (Portugal)¹; Coelho, Luís (Portugal)²; Almeida-Antunes, Natália (Portugal)¹; Ferreira, Simão (Portugal)¹; Rocha, Nuno (Portugal)¹; Carvalho, Paulo (Portugal)¹

1 - RISE-Health, Center for Translational Health and Medical Biotechnology Research (TBIO), School of Health, Polytechnic of Porto; 2 - ISEP

19:30

23:30 **Conference Dinner**

Date: Wednesday, 17th June

Time: 19:30 – 23:30

Location: Forum Braga

The conference dinner includes: Buffet dinner, wine, soft drinks. Live Music by Bruce Brothers Music

Dress Code: Smart Casual



quinta-feira, 18 junho 2026

10:00

14:45 **Registration**

11:00

12:30 **Parallel Sessions**

Session: AA12 – Natural Hazards **Grand Auditorium - Level 0**

Chairs

Patricia Mares Nasarre

Aud Marit Wahl

Speaker

Di Nardo, Mario OC - (26477) - RISK ANALYSIS OF THE HYDROGEN SUPPLY CHAIN

Di Nardo, Mario (Italy)¹; Monica, Luigi (Italy)²; Tonti, Andrea (Italy)²; Ricciardi, Lorian (Italy)²; Ingegneri, Diego (Italy)¹

1 - Università Telematica Pegaso; 2 - INAIL, Dipartimento Innovazione Tecnologica e Sicurezza degli Impianti, Prodotti e Insediamenti Antropici, Roma, Italy

Di Nardo, Mario OC - (26485) - LPG STORAGE FACILITIES AND THE SEVESO III DIRECTIVE: APPLICATION OF THE INDEX METHOD AND VERIFICATION OF TERRITORIAL COMPATIBILITY

Madonna, Marianna (Italy)³; Ricciardi, Lorian (Italy)²; Di Nardo, Mario (Italy)¹

1 - Università Telematica Pegaso; 2 - INAIL -DIT- ROMA; 3 - INAIL -UOT NAPOLI

Di Nardo, Mario OC - (27660) - SAFETY MANAGEMENT FOR NUCLEAR PLANTS : A LITERATURE REVIEW

Di Nardo, Mario (Italy)¹; Sole, Luigi (Italy)²; Fortunato, Antonio (Italy)²; Diano, Vincenzo (Italy)²; Carmela Santillo, Liberatina (Italy)²; Giliberti, Claudia (Italy)³

1 - Università Telematica Pegaso; 2 - Department of Chemical, Materials and Industrial Production Engineering, University of Naples Federico II; 3 - INAIL, Dipartimento Innovazione Tecnologica e Sicurezza degli Impianti, Prodotti e Insediamenti Antropici, Roma, Italy

Session: AA8 – Information Technology and Telecommunications **Small Auditorium - Level 1**

Chairs

Elena Zaitseva

Roberto Canonico

Speaker

Langstrand, Jens-Patrick OC - (26101) - EXPLORING HEAD-TRACKING AS A COMPLEMENTARY TOOL FOR HUMAN PERFORMANCE ASSESSMENT IN NUCLEAR CONTROL ROOMS

Nguyen, Hoa Thi (Norway)¹; Langstrand, Jens-Patrick (Norway)¹

1 - Institute for Energy Technology

Fleischmann, Josef OC - (26093) - ENHANCING PCB RELIABILITY WITH AUTOENCODER-BASED ANOMALY DETECTION FOR OXIDATION DEGRADATION IN SELECTIVE SOLDERING NOZZLES

Fleischmann, Josef (Germany)¹

1 - Josef Fleischmann

Langstrand, Jens-Patrick OC - (26141) - HUMAN-AI COLLABORATION IN NUCLEAR FAULT DIAGNOSIS: OPERATOR EVALUATION OF LLM-BASED ASSISTANCE

Langstrand, Jens-Patrick (Norway)¹; Mcdonald, Robert (Norway)¹; Nystad, Espen (Norway)¹; Gundersen, Aleksander Bjørge (Norway)¹; Braarud, Per Øivind (Norway)¹
1 - Institute for Energy Technology

Castrillo, Juan OC - (26189) - THE SIDE ROAD(S) OF AR: GEOSPATIAL ANCHORS EVALUATION FOR TRAFFIC SIGNS

Castrillo, Juan (Spain)¹; Rodriguez-Somoza, Juan Luis (Spain)¹; Martínez-Sánchez, Joaquín (Spain)¹; Balado-Frías, Jesús (Spain)¹

1 - CINTECX, Universidade de Vigo, GeoTECH Group, 36310 Vigo, Spain

Navares Vázquez, Juan Carlos OC - (26205) - INTEGRATING LIDAR AND VIRTUAL REALITY FOR SAFE BUILDING CONDITION ASSESSMENT

Navares Vázquez, Juan Carlos (Spain)¹; Sánchez-Rodríguez, Ana (Spain)¹; Arias, Pedro (Spain)¹; Balado-Frías, Jesús (Spain)¹

1 - CINTECX, Universidade de Vigo, GeoTECH, 36310 Vigo, Spain

Canonico, Roberto OC - (26397) - AI-BASED REQUIREMENT PROCESSING TO SUPPORT VALIDATION OF FUTURE RAILWAY MOBILE COMMUNICATION

Nocente, Arianna (Italy)²; Risi, Riccardo (Italy)⁴; Flammini, Francesco (Italy)¹; Donadio, Pasquale (Italy)⁵; Canonico, Roberto (Italy)³; Vittorini, Valeria (Italy)³

1 - University of Florence; 2 - University of Pisa, Pisa, Italy; 3 - University of Naples Federico II; 4 - Independent Researcher; 5 - Comesvil S.p.A, Villaricca, Naples, Italy

SS-14: Artificial Intelligence, Meta-Modelling and Advanced Simulation for the Safety Analysis of Nuclear Systems **Congress Room 1 - Level 1**

Chairs

Nicola Pedroni

Francesco Di Maio

Speaker

Chae, Young Ho SS - (27773) - TCAV-BASED OPERATOR SUPPORT SYSTEM FOR HUMAN RELIABILITY ENHANCEMENT IN SAFETY-CRITICAL ENVIRONMENTS

Chae, Young Ho (Korea, Republic of)¹; Koo, Seo Ryong (Korea, Republic of)¹

1 - Korea Atomic Energy Research Institute

Kim, Seung Geun SS - (27817) - DEVELOPMENT OF TAXONOMY OF COMMUNICATION ERRORS BETWEEN HUMAN AND ARTIFICIAL INTELLIGENCE AGENT FOR NUCLEAR POWER PLANT OPERATION ASSISTANCE

Kim, Seung Geun (Korea, Republic of)¹; Cha, Joo Won (Korea, Republic of)^{1,2}; Yu, Yonggyun (Korea, Republic of)^{1,2}

1 - Korea Atomic Energy Research Institute (KAERI); 2 - University of Science and Technology

Jo, Wooseok SS - (26133) - DYNAMIC RISK ASSESSMENT FRAMEWORK TO SUPPORT DECISION-MAKING FOR NUCLEAR SAFETY

Jo, Wooseok (Korea, Republic of)¹; Kim, Kyeong Seo (Korea, Republic of)¹; Lee, Seung Jun (Korea, Republic of)¹

1 - Ulsan National Institute of Science and Technology, Republic of Korea

Zhao, Yike SS - (27825) - INTEGRATION OF OPTIMAL TRANSPORT AND EXPLAINABLE ARTIFICIAL INTELLIGENCE TECHNIQUES TO ASSESS THE TRUSTWORTHINESS OF DOMAIN ADAPTED MODELS FOR CRITICAL HEAT FLUX PREDICTION

Zhao, Yike (Portugal)¹; Floreale, Giovanni (Portugal)¹; Miqueles, Leonardo (Portugal)¹; Zio, Enrico (Portugal)^{1,2}

1 - Energy Department, Politecnico di Milano, Milan, Italy; 2 - MINES Paris-PSL, CRC, Sophia Antipolis, France

Session: AA5 – Critical Infrastructures **Congress Room 3 - Level 1**

Chairs

Matteo Spada

Blazhe Gjorgiev

Speaker

Pedersen, Tom Ivar OC - (26279) - MODELLING THE DEGRADATION RATE OF WOODEN UTILITY POLES IN GROUND CONTACT

Pedersen, Tom Ivar (Norway)¹; Istad, Maren (Norway)¹

1 - SINTEF Energy Research

Hudcová, Marie OC - (26514) - STRENGTHENING CYBERSECURITY IN REGIONAL GOVERNMENTAL UNITS
Hudcová, Marie (Czech Republic)¹; Oulehlová, Alena (Czech Republic)¹

1 - University of Defence

Roud, Ensieh OC - (27649) - THE RESILIENCE OF THE NORWEGIAN FINANCIAL INFRASTRUCTURE FOR PAYMENT TERMINALS

Roud, Ensieh (Norway)¹; Hauge, Ferdinand (Norway)³; Steen, Riana (Norway)²

1 - Nord university; 2 - University of South-Eastern Norway (USN); 3 - Oticon Norge

Zuiderwijk, Dianka OC - (27762) - IMPROVING INTER-INFRASTRUCTURAL RESILIENCE OF INTERCONNECTED CRITICAL INFRASTRUCTURE SERVICES BY STRENGTHENING REQUISITE VARIETY CAPABILITY OF OPERATIONAL ACTORS

Zuiderwijk, Dianka (Netherlands)¹; Boersma, Kees (Netherlands)¹; Groenewegen, Peter (Netherlands)¹

1 - VU University Amsterdam

Kok, Arno OC - (27860) - ALIGNING IT/OT LIFECYCLES IN DIGITIZED RAILWAY ASSETS
Kok, Arno (Netherlands)¹; Martinetti, Alberto (Netherlands)¹; Braaksma, Jan (Netherlands)¹
 1 - University of Twente

SS-29: Risk Analysis and Safety in Machinery **Congress Room 4 - Level 1**

Chairs

Luca Landi

Heinrich Moedden

Speaker

Moedden, Heinrich SS - (26199) - SAFETY OF MACHINERY: HOW YEARLY RECORDED ACCIDENT DATA RELATE TO THE FASCINATION "VISION ZERO"

Moedden, Heinrich (Germany)¹

1 - German Machine Tool Builders' Association (Frankfurt am Main)

Moedden, Heinrich SS - (26201) - SAFETY OF MACHINERY: THREE DECADES OF IMPACT TESTING OF MACHINE GUARDS LED TO SIGNIFICANT IMPROVEMENTS

Moedden, Heinrich (Germany)¹

1 - German Machine Tool Builders' Association (Frankfurt am Main)

Paolucci, Federico SS - (27807) - DESIGN AND IMPLEMENTATION OF A MACHINE FEEDBACK SYSTEM WITH DUAL DIGITAL TWINS FOR INDUSTRIAL APPLICATIONS

Paolucci, Federico (Italy)¹; Landi, Luca (Italy)¹; Mariconte, Raffaele (Italy)²; Giliberti, Claudia (Italy)²

1 - Department of Engineering, University of Perugia; 2 - Department of Technological Innovations and Safety of Plants, Products and Anthropic Settlements, INAIL

Di Paco, Francesco SS - (26533) - TECHNICAL REVIEW OF EMERGING RISKS AND MITIGATION STRATEGIES FOR MOBILE AUTONOMOUS MACHINES IN OUTDOOR CONSTRUCTION

Braglia, Marcello (Italy)¹; Di Paco, Francesco (Italy)¹; Frosolini, Marco (Italy)¹; Gabbrielli, Roberto (Italy)¹; Gattamelata, Davide (Italy)²; Marrazzini, Leonardo (Italy)¹; Pichini, Elisa (Italy)²; Puri, Daniele (Italy)²; Romanelli, Lorenzo (Italy)¹; Tomassini, Laura (Italy)²; Vita, Leonardo (Italy)²

1 - University of Pisa; 2 - Italian National Institute for Assurance against Accidents at work

Marrazzini, Leonardo SS - (26547) - TECHNOLOGICAL ASSESSMENT FOR THE DEVELOPMENT OF A NOVEL AUTONOMOUS MOBILE OPERATING MACHINE WITH SUPERVISION TO ENHANCE SAFETY IN CONSTRUCTION SITES

Gabbrielli, Roberto (Italy)¹; Marrazzini, Leonardo (Italy)¹; Frosolini, Marco (Italy)¹; Di Paco, Francesco (Italy)¹; Costante, Gabriele (Italy)²; Gattamelata, Davide (Italy)³; Landi, Luca (Italy)²; Tavanti, Emanuele (Italy)⁵; Pichini, Elisa (Italy)³; Puri, Daniele (Italy)³; Rossi, Gianluca (Italy)²; Rossi, Pierluigi (Italy)⁴; Tomassini, Laura (Italy)³; Vita, Leonardo (Italy)³

1 - Department of Civil and Industrial Engineering, University of Pisa, Italy; 2 - Department of Engineering, University of Perugia, Italy; 3 - Italian National Institute for Assurance against Accidents at work (INAIL); 4 - Department of Agriculture and Forest Sciences, University of Tuscia; 5 -

Department of Information Engineering, University of Pisa, Italy

Landi, Luca SS - (27621) - SAFETY FOR GRAVITY LOADED AXIS FROM STANDARDIZED REQUIREMENTS TO REAL DESIGN OF SAFETY

Landi, Luca (Italy)¹; Landi, Lorenzo (Italy)¹; Burattini, Luca (Italy)¹; Albanini, Marco (Italy)²

1 - department of engineering, university of perugia; 2 - CMS S.p.A.

Burattini, Luca SS - (27622) - EVALUATION OF VISION SYSTEMS FOR OUTDOOR PROTECTION OF HUMANS AND DOMESTIC ANIMALS

Tomassini, Laura (Italy)²; Burattini, Luca (Italy)¹; Landi, Luca (Italy)¹

1 - University of Perugia, engineering department; 2 - Italian National Institute for Assurance against Accidents at work (INAIL), Italy

Session: MA16 – Uncertainty Analysis **Congress Room 5 - Level 1**

Chairs

Adolphus Lye*

Speaker

Belda-Ley, Mercedes OC - (26296) - FRAMEWORK FOR RISK-INFORMED DECISIONS BEYOND POINT ESTIMATES: STATISTICALLY RIGOROUS MONTE CARLO METHODS FOR HEAVY-GAS DISPERSION UNCERTAINTY ANALYSIS

Belda-Ley, Mercedes (Denmark)¹; Sin, Gürkan (Denmark)¹

1 - Technical University of Denmark

Kakaie, Arman OC - (26478) - UNCERTAINTY ANALYSIS OF AGING STRUCTURES UNDER SPATIO-TEMPORAL DEGRADATION PROCESS

Kakaie, Arman (Portugal)¹; Guedes Soares, Carlos (Portugal)¹

1 - Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Lye, Adolphus OC - (24044) - A QUADRATIC-MOVE TRANSITIONAL ENSEMBLE MARKOV CHAIN MONTE CARLO STRATEGY FOR STOCHASTIC RELIABILITY ANALYSIS UNDER LIMITED DATA

Lye, Adolphus (Singapore)¹; Xiao, Sicong (Singapore)¹; Ferson, Scott (United Kingdom)²

1 - Singapore Nuclear Research and Safety Institute, National University of Singapore; 2 - Institute for Risk and Uncertainty, Department of Civil and Environmental Engineering, University of Liverpool

Hosseini, Motahareh OC - (26193) - LONG-TERM IMPACT OF GEOPOLITICAL DEVELOPMENTS AND ENVIRONMENTAL POLICIES ON CARGO VOLUME FORECASTS IN THE BALTIC SEA REGION

Hosseini, Motahareh (Finland)^{1,2}; Luoma, Emilia (Finland)^{1,3}; Lehtikainen, Annukka (Finland)^{1,4}

1 - Kotka Maritime Research Centre(Merikotka), Finland; 2 - Marine and Arctic Technology, Aalto University, Finland; 3 - Ecosystems and Environment Research Programme, University of Helsinki, Finland; 4 - University of Helsinki, Finland

Berchtold, Florian OC - (26204) - RECENT ENHANCEMENTS OF THE MCDET TOOL FOR DYNAMIC PSA Eraerds, Tanja (Germany)¹; Scheuer, Josef (Germany)¹; Johst, Sören (Germany)¹; <u>Berchtold, Florian</u> (Germany)¹ 1 - GRS
Plischke, Elmar OC - (27694) - SPOT THE RAINBOW: AUGMENTING GLOBAL SENSITIVITY METHODS WITH GRAPHICAL VISUALISATION TECHNIQUES <u>Plischke, Elmar</u> (Germany)¹; Abdelhafiz, Mostafa (Germany)² 1 - Helmholtz-Zentrum Dresden-Rossendorf; 2 - TU Clausthal
Paez Jimenez, Mariana Gabriela OC - (29001) - A SYSTEMATIC EVALUATION OF UNCERTAINTY QUANTIFICATION IN TRANSPORT CARBON ACCOUNTING STANDARDS <u>Paez Jimenez, Mariana Gabriela</u> (United Kingdom)¹; Mcintosh, Angus (United Kingdom)¹; De Angelis, Marco (United Kingdom)¹ 1 - University of Strathclyde

SS-04: Advances in Time-Dependent Reliability of Complex Systems **Meeting room 6 - Level -1**

Chairs

Michael Beer

Meng-Ze Lyu

Speaker

Zhao, Jie SS - (26357) - DYNAMIC GAME-THEORETIC RISK ASSESSMENT FOR VEHICLE-PEDESTRIAN INTERACTION WITH PERCEPTION UNCERTAINTY

Zhao, Jie (Portugal)¹; Zeng, Shengkui (Portugal)¹; Guo, Jianbin (Portugal)¹; Che, Haiyang (Portugal)¹

1 - School of Reliability and Systems Engineering, Beihang University, Beijing 100191, China

Huang, Xin SS - (26426) - A NOVEL MFK-DISCREPANCY FOR POINT SELECTION IN STOCHASTIC RESPONSE ANALYSIS OF ENGINEERING SYSTEMS

Huang, Xin (China)¹; Chen, Jianbing (China)²; Li, Jie (China)²

1 - College of Civil Engineering, Tongji University; 2 - State Key Laboratory of Disaster Reduction in Civil Engineering & College of Civil Engineering, Tongji University

Lyu, Meng-Ze SS - (26473) - A PATH-INTEGRAL FRAMEWORK FOR TIME-DEPENDENT RELIABILITY ANALYSIS OF NONLINEAR STOCHASTIC SYSTEMS VIA THE INTEGRAL FORM OF THE LI-CHEN EQUATION

Lyu, Meng-Ze (Portugal)¹; Luo, Yi (Portugal)¹; Zhang, Shenghan (Portugal)²; Beer, Michael (Portugal)¹

1 - Institute for Risk & Reliability, Leibniz University Hannover; 2 - Department of Civil & Environmental Engineering, Hong Kong University of Science & Technology

Krini, Abderrahim SS - (27914) - MULTI-DIMENSIONAL STRESS-BASED RELIABILITY MODELING: A THREE-DIMENSIONAL DISTRIBUTION FRAMEWORK FOR PREDICTING FIELD PERFORMANCE OF AUTOMOTIVE ELECTRONIC CONTROL UNITS

Krini, Abderrahim (Portugal)¹; Ouertani, Aymen (Portugal)²

1 - Technische Hochschule Ostwestfalen-Lippe; 2 - Robert Bosch GmbH

SS-22: Concepts, Methods and Models for NaTech Risk Analysis and Management **Meeting room 7 - Level -1**

Chairs

Christophe Berenguer

Jean-Marc Tacnet

Speaker

Sylvain, Arnaud SS - (26223) - DYNAMIC TIME-DEPENDENT MODELLING OF INFRASTRUCTURES VULNERABILITY FOR NATECH RISK ASSESSMENT : CRITICAL REVIEW AND NEW FRAMEWORK PROPOSAL

Sylvain, Arnaud (France)¹; Jean-Marc, Tacnet (France)²; Pierre, Gehl (France)³; Jérémy, Rohmer (France)³; Christophe, Berenguer (France)¹

1 - GIPSA-lab, Université Grenoble Alpes, Grenoble INP, CNRS, France; 2 - INRAE – IGE, France; 3 - BRGM

Quiriconi, Elliot SS - (26321) - MAPPING NATECH RESEARCH GAPS: A SYSTEMATIC REVIEW OF REVIEWS
Quiriconi, Elliot (France)¹; Adrot, Anouck (France)¹; Mazri, Chabane (France)²

1 - Management research (DRM), Dauphine - PSL University, France; 2 - National Institute for Industrial Environment and Risks, France

Claire, Jaffrézic SS - (26452) - UNDERSTANDING THE BLIND SPOT IN THE WARNING PROCESS DURING “NATECH” EVENTS: LESSONS FROM THE BLAYAIS NUCLEAR POWER PLANT FLOOD IN FRANCE (1999)
Claire, Jaffrézic (France)³; Elsa, Gisquet (France)¹; Johnny, Douvinet (France)²

1 - ANSR; 2 - Avignon Université / UMR ESPACE 7300 CNRS; 3 - Centre National de la recherche Scientifique (CNRS) Avignon Université / UMR ESPACE 7300 CNRS

Pénicaud, Juliette SS - (27780) - SENSITIVITY OF FLOODING TO THE MORPHOLOGY IN A MACROTIDAL ESTUARY, A MODELLING APPROACH

Pénicaud, Juliette (France)¹; Sottolichio, Aldo (France)¹; Gasset, Rémy (France)²; Coulet, Christophe (France)³

1 - Univ. Bordeaux, CNRS, Bordeaux INP, EPOC, UMR 5805, 33600 Pessac, France; 2 - Cerema Direction Sud-Ouest-Centre d'Etudes et d'Expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement, Bordeaux; 3 - Artelia, Echirolles, France

SS-16: Bayesian Networks Modelling for Reliability and Risk Assessment **Meeting room 8 - Level -1**

Chairs

Luca Podofillini

Francesco Di Maio

Speaker

Kupjetz, Simon SS - (26183) - QUANTITATIVE RISK ASSESSMENT FOR MARITIME AUTONOMOUS NAVIGATION USING AI PERCEPTION METRICS AND BAYESIAN NETWORKS

Kupjetz, Simon (Germany)¹; Nuffer, Jürgen (Germany)¹; Millitzer, Jonathan (Germany)¹; Jungbauer, Nico (Germany)²; Isermann, Jan (Germany)²; Rostock, Claas (Germany)³; Issac, Daliya (Germany)⁴
1 - Fraunhofer LBF; 2 - TKMS ATLAS ELEKTRONIK GmbH; 3 - DNV SE; 4 - former Student at Technische Hochschule Deggendorf (AI for Smart Sensors and Actuators)

Malinowski, Jacek SS - (26249) - A RECURSIVE ALGORITHM FOR COMPUTING JOINT PROBABILITIES IN A BAYESIAN NETWORK, ILLUSTRATED BY ITS APPLICATION TO SAFETY ANALYSIS OF AN INDUSTRIAL FACILITY.

Malinowski, Jacek (Poland)¹

1 - Systems Research Institute, Polish Academy of Sciences

Da Silva Nunes, Caique Emanuel SS - (26412) - BAYESIAN NETWORK-BASED RELIABILITY ASSESSMENT OF AN INTEGRATED SUBSEA PRODUCTION ARCHITECTURE

Da Silva Nunes, Caique Emanuel (Brazil)¹; Didier Lins, Isis (Brazil)¹; Das Chagas Moura, Márcio José (Brazil)¹

1 - Universidade Federal de Pernambuco

Abdollahi, Mohsen SS - (27868) - RELIABILITY AND AGEING ASSESSMENT OF XLPE POWER CABLES USING BAYESIAN NEURAL NETWORK

Abdollahi, Mohsen (United Kingdom)¹; Alipour Bonab, Shahin (United Kingdom)¹; Song, Wenjuan (United Kingdom)¹; Flynn, David (United Kingdom)¹; Yazdani-Asrami, Mohammad (United Kingdom)¹

1 - CryoElectric Research Lab, Propulsion, Electrification & Superconductivity group, Autonomous Systems and Connectivity division, James Watt School of Engineering, University of Glasgow, Glasgow G12 8QQ, United Kingdom

SS-09: Prescriptive Maintenance **Meeting room 9 - Level -1**

Chairs

Piero Baraldi

Enrico Zio

Speaker

Esposito, Nicola OC - (27880) - A PRESCRIPTIVE MAINTENANCE POLICY FOR A TWO-UNIT DEGRADING PRODUCTION SYSTEM

Esposito, Nicola (Portugal)¹; Pulcini, Gianpaolo (Portugal)²; Castanier, Bruno (Portugal)³; Giorgio, Massimiliano (Portugal)⁴

1 - Scuola Superiore Meridionale; 2 - Istituto di Scienze e Tecnologie per l'Energia e la Mobilità Sostenibili (STEMS), CNR; 3 - Université d'Angers; 4 - Università degli Studi di Napoli Federico II

Wang, Xi OC - (26344) - SCENARIO-BASED OPTIMIZATION OF RUL MODELS FOR PRESCRIPTIVE MAINTENANCE IN MEDICAL IMAGING EQUIPMENT <u>Wang, Xi</u> (Portugal)¹; Das, Pankaz (Portugal)¹; Alpay, Bulent (Portugal)¹ 1 - GE Healthcare Technologies
Piscopo, Antonio OC - (26463) - A PRESCRIPTIVE MAINTENANCE POLICY FOR SYSTEMS WITH A BATHTUB-SHAPED DEGRADATION RATE <u>Piscopo, Antonio</u> (Portugal)^{1,2}; Castanier, Bruno (Portugal)²; Fouladirad, Mitra (Portugal)³; Giorgio, Massimiliano (Portugal)⁴ 1 - Scuola Superiore Meridionale; 2 - Université Angers; 3 - Aix Marseille Université; 4 - Università degli Studi di Napoli Federico II
Gao, Shuo OC - (26479) - DEGRADATION-BASED CONTROL ALLOCATION OF STOCHASTICALLY DEGRADING OVER-ACTUATED SYSTEMS WITH MAINTENANCE PERSPECTIVE <u>Gao, Shuo</u> (France)¹; Huynh, Khac Tuan (France)¹; Langeron, Yves (France)¹; Grall, Antoine (France)¹ 1 - University of Technology of Troyes
Christophe, Berenguer OC - (26513) - OPTIMIZING CONDITION-BASED MAINTENANCE UNDER CIRCULARITY AND OPERATIONAL CONSTRAINTS WITHIN FINITE HORIZONS Ghofrane, Boujemaa (France)¹; <u>Christophe, Berenguer</u> (France)¹; Elodie, Robert (France)² 1 - Gipsa Lab; 2 - Volvo Group Trucks Technology
Dersin, Pierre OC - (27781) - DYNAMIC PREDICTIVE MAINTENANCE STRATEGY BASED ON A TIME TRANSFORMATION METHOD <u>Dersin, Pierre</u> (Sweden)¹; Rocchetta, Roberto (Switzerland)²; Goglio, Dario (Netherlands)³; Arias-Chao, Manuel (Netherlands)³ 1 - Luleå University of Technology; 2 - University of Applied Science and Arts of Southern Switzerland; 3 - Delft University of Technology/Faculty of Aerospace Engineering

SS-17: Resilience of Cyber-Physical Systems (CPSS) to Security Attacks **Meeting room 10 - Level -1**

Chairs

Mario P Brito

Speaker

Rychkov, Valentin SS - (26230) - SAFETY METHODS FOR CYBER SECURITY : USING STATECHART FOR THE ANALYSIS OF A CYBER ATTACK

Picoco, Claudia (France)¹; Rychkov, Valentin (France)¹; Ma, Jingxuan (France)¹

1 - EDF R&D

He, Shushan SS - (26352) - MODELLING MARITIME CYBERSECURITY RISK DYNAMICS: A SOCIO-TECHNICAL SYSTEM DYNAMICS PERSPECTIVES

He, Shushan (United Kingdom)¹; Brito, Mario (United Kingdom)¹; Al Hashimy, Nawfal (United Kingdom)¹

1 - University of Southampton

Kim, Seungmin SS - (26486) - PROPOSAL OF A METHODOLOGY FOR SELECTING TARGET SYSTEMS FOR NUCLEAR FACILITY CYBERSECURITY EXERCISES

Kim, Seungmin (Korea, Republic of)¹; Heo, Gyunyoung (Korea, Republic of)²

1 - Division of Cyber Security, Korea Institute of Nuclear Nonproliferation and Control, Republic of Korea; 2 - Department of Nuclear Engineering, Kyung Hee University, Republic of Korea

Clavijo Mesa, Maria Valentina SS - (26597) - SECURITY MANAGEMENT OF INTERDEPENDENT CRITICAL INFRASTRUCTURES BY DEEP REINFORCEMENT LEARNING

Clavijo Mesa, Maria Valentina (Portugal)¹; Zhang, Jinming (Portugal)¹; Pincirolì, Luca (Portugal)¹

1 - Energy Department, Politecnico di Milano

12:30

13:15 **Closing ceremony** **Grand Auditorium - Level 0**

13:15

14:45 **Lunch**