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SS-27: Research outcomes from the 1st Young Researchers' Bilateral Workshop Politecnico di Milano – Leibniz University Hannover

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Description

This special session presents the outcomes of the 1st Young Researchers' Workshop on Reliability and Risk Assessment in Uncertain Environments, held in Bormio in October 2025, Italy, as a collaborative initiative between the Politecnico di Milano and Leibniz University Hannover.

In the workshop, mixed early-career scientists from the two institutes worked together in interdisciplinary teams under the guidance of senior mentors. Each team made the effort of merging individual expertises for tackling open challenges in reliability, resilience, and risk analysis. The developed works show originality in merging heterogeneous approaches from the diverse backgrounds of the participants.

The session aims at showcasing the outcomes of interdisciplinary collaborations, fostering dialogue among the broader ESREL community, and promoting future cross-institutional research initiatives in reliability, resilience and risk analysis.

Topics of Interest

Methods:

- Antifragility – Reinforcement Learning
- Domain Adaptation – eXplainable Artificial Intelligence
- Critical Infrastructures – Adversarial Reinforcement Learning
- Large Language Models – Bayesian Inference
- Resilience – Multi-criteria Optimization – Natural Hazards

Applications:

- Self-improving systems
- Nuclear Power Plants
- Interdependent Critical Infrastructures
- Manufacturing Systems