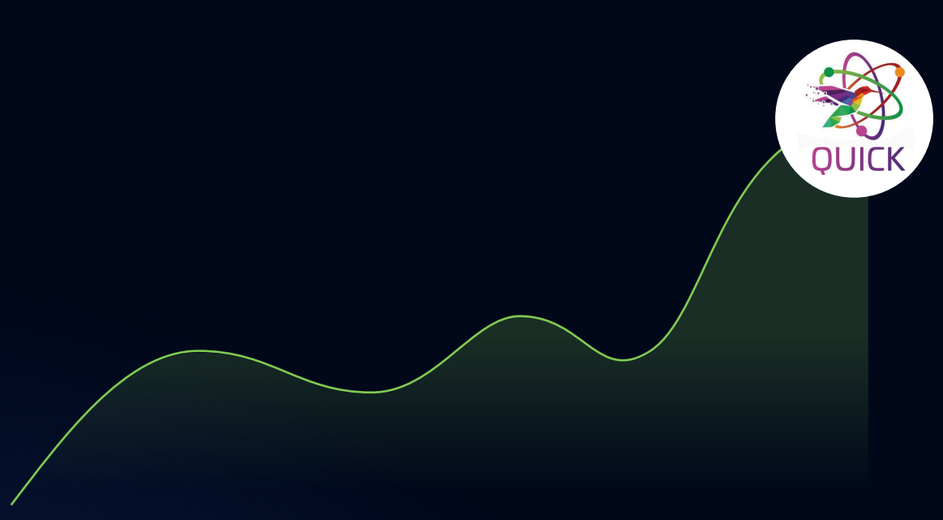
ColibriTD

Empowering Business Solutions with cutting-edge Software.

QUICK for Aeronautics

Prepare today the physical simulation of tomorrow with quantum computing



Aeronautical engineers face increasingly complex physical simulations that require massive computing resources and high precision.

QUICK is a hybrid quantum–classical simulation platform designed to solve large-scale partial differential equations (PDEs) while ensuring a high level of accuracy.
Based on our proprietary H-DES algorithm, QUICK enables **experimentation**, **prototyping**, and preparation today for the upcoming quantum computing revolution.

Use cases of aeronautical simulations with quantum computing

Aerodynamic optimization of aircraft

Reduce drag and improve aircraft energy efficiency while complying with certification requirements.

With QUICK: Fast resolution of the Navier–Stokes equations to explore multiple configurations of wings, tailplanes, or integrated airframes.

Impact

- Reduced simulation and prototyping time
- Fuel consumption and range improvements
- Design optimization early in the production cycle

Thermal and vibrational simulation of onboard structures

New composite materials and “more-electric aircraft” architectures complicate thermal and vibrational interactions.

With QUICK: Multiphysics modeling to anticipate stress points and virtually test new structural configurations.

Impact

- Improved reliability of onboard systems
- Reduction of physical testing cycles
- Acceleration of certification processes

Modeling of flows in propulsion systems

Optimize the efficiency and cooling of high-bypass or hybrid engines.

With QUICK: H-DES enables the simulation of fluid-structure interactions and heat transfers in critical engine areas.

Impact

- Improved thermal and mechanical performance
- Reduced risk of system failure
- Accelerated validation of innovative propulsion architectures

Why adopt QUICK now?

Hardware-agnostic

Ready for the quantum era

Accessible and integrated

Our Vision

Preparing aeronautical stakeholders for the transition to industrial quantum computing. By combining advanced physical solvers with an open architecture, we enable companies to test today the scenarios that will become strategic tomorrow.

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colibritd.com

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