GE Aerospace

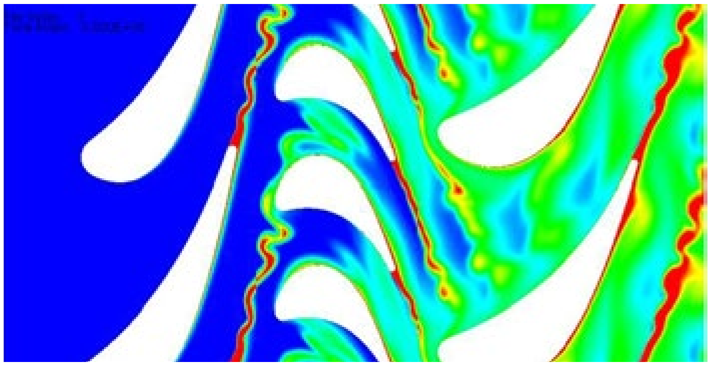
Aerodynamics and Advanced Modeling and Simulation

Advanced aerodynamics technology is a key driver for improved performance, reliability, cost, and environmental impact across nearly every GE industrial product. Our team at GE Aerospace, Research develops advanced aerodynamics technology, and also builds and leverages advanced modeling and simulation capabilities to create innovative aerodynamics solutions that power and move the world in better, more sustainable ways.

The Aero Technology team brings state-of-the-art expertise in fluid dynamics, acoustics, and aeromechanics in support of a wide range of applications, across GE Aerospace. The Advanced Modeling and Simulation team brings world-class expertise in software development (models and numerical simulations) to the broad range of turbomachinery and non-turbomachinery applications.

GE Aerospace, Research Portfolio

The team drives aerodynamic technology leadership in design for jet engines by supporting advanced technology developments for compressor, turbine, inlet, exhaust, external aerodynamics and installed effects. We leverage accurate and efficient numerical simulations to provide insight into flow physics and guide technology development to optimize turbomachinery and non-turbomachinery applications. The team also partners with GE's Digital team to feed the digital industrial revolution and leverage the digital environment for smarter and more robust designs.



Multi-disciplinary Modeling and Advanced Numerical Techniques

The team uses multi-disciplinary modeling and advanced numerical techniques to develop design tools to enable next-generation technology Aerodynamics and Advanced Modeling and Simulation developments and also partners with experts from other technical domains at GE Aerospace, Research to develop analytical models and high-fidelity simulation techniques to drive "design by numerical analysis."

The team also has demonstrated significant success in creating machine learning surrogate models from physics-based engineering simulation toolchains, drawing from high performance computing and state-of-the art artificial intelligent methods. These models have the potential to dramatically reduce the time and cost of reaching the most optimal design for complex turbomachinery parts.

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