



Aurélien Doriat

Aerodynamic and Heat Transfer Engineer



Profile

I am a highly specialized in the fields of **aerodynamics**, **heat transfer** and **materials**. I taking great pride on tackling **complex challenges** and delivering **innovative solutions**. As a proactive learner, I consistently seek opportunities to **expand my knowledge and skillset**.



Work experience

present
↑
dec. 2021

PhD thesis (ISAE-ENSMA)

Sonic heated flow influence on thermo-oxidation aging of epoxy polymer.

- Experiment set-up, material properties measurements, reporting/presenting results
- CFD, deep learning, modeling, data analysis
- Autonomy, Project Management, Scientific Rigor, Supervision of Master Interns.

dec. 2021
↑
jan. 2021

Research Engineer (CNRS)

Towards a Better Understanding of the Effect of Water on the Acoustic Reduction of Rocket Take-Offs.

- Inverse methods for predicting heat flow in a free jet.
- Fluorescence-based metrological development for simultaneous two-phase measurements.

dec. 2020
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mar. 2020

Final Internship (Safran Helicopter Engine)

Ecopulse Project. Simulation of the Internal and External Aerothermal Flow of an Electric Propulsion Unit.

- Setting up 3D CFD calculations: Comparing Methods: RANS methods, Virtual Blade method.
- Understanding distributed propulsion architecture.



Education

mar. 2020
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sep. 2017

Engineer and Master diploma

ISAE-ENSMA, Poitiers

- Turbulence (concepts and simulation), Blade aerodynamics, Heat Transfer Modelling, Compressible aerodynamics, Inverse Method.
- Educational Project and practical works.



Personal achievement

Micro-gravity flight and experiment

Managed the project from A-Z. Designed, created and ran an experiment in a parabolic flight to simulate microgravity conditions.

Software to analyse flight trace

Python code to analyze flight path and statistics to compare and improve glider pilot performance.



Contact

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Software

- Starccm+, Ansys, XFLR5
- Python, Matlab
- L^AT_EX, Microsoft Office Pack



Languages

French Native language

English Professional use



Publications

- **Congress**
SFT 2019 : French National Congress, Nantes
Indentation 2023 : National Indentation Congress, Tours
- **Articles**
A novel method based on color measurement for the characterization of polymer thermo-oxidation, (2024) *Under review*



Hobbies

- **Gliding :**
Flight instructor, More than 1000 flight hours, Competitor and record holder, Volunteer at the gliding club.
- **Sports :**
Tennis, Badminton, Hiking, Cross-country Bike