

Bastien JOUY

Ph.D. student in fluid mechanics

Email: bastien.jouy@edf.fr

Phone: +33-610-409-399

EDUCATION

Ecole des Ponts ParisTech

Ph.D. in fluid mechanics

Champs-sur-Marne, France

Nov. 2021 - Nov. 2024

Sorbonne University - Faculty of Science

Master degree in modeling and simulation in hydrodynamics

Paris, France

Sep. 2019 - Sep. 2021

- Courses taken: Continuum mechanics, Multiphase flow, Numerical methods for incompressible flows, Turbulence and instabilities, Flows and transfers in natural environments, Vortex dynamics
- Rank: 1st out of 17 students

ESIEE Paris

MSc in engineering majoring in renewable energy and energy efficiency

Champs-sur-Marne, France

Sep. 2014 - Aug. 2019

- Courses taken: Thermodynamics, Thermal transfer, Water and waste management, Hydraulic power, Wind power, Photovoltaic and thermal solar energy, Dynamic simulation of energy systems
- Rank: 18th out of 146 students

EXPERIENCE

Electricité de France (EDF) - Laboratoire d'Hydraulique Saint-Venant

Ph.D. in fluid mechanics

Chatou France

Nov. 2021 - Nov. 2024

- **Title:** Numerical modeling of Favre waves
- **Supervision:** Prof. Damien Violeau (EDF R&D LNHE / LHSV), Dr. Mario Ricchiuto (Inria Bordeaux - Sud-Ouest), Dr. Minh Hoang Le (LHSV), Eric Demay (EDF R&D LNHE)
- **About:** Model numerically Favre waves which are both nonlinear and dispersive waves taking into account the longitudinal variation of the channel cross-section. Simulate the propagation over long distances (few kilometers), and more complex phenomena such as channel branching or curvature in the 1D module of TELEMAC-MASCARET. Validation of the numerical simulations with both laboratory and on-site experiments.

Electricité de France

Master's degree internship

Chatou, France

Mar. 2021 - Aug. 2021

- **Title:** Study of macrophyte uprooting on a section of the Rhône River using two-dimensional hydrodynamic numerical modeling
- **Supervision:** Dr. Florian Cordier (EDF R&D LNHE)
- **About:** Estimate the necessary hydrodynamic stresses for the uprooting of macrophytes that can generate clogging of nuclear power plants cooling sources. Sensitivity analyses with different drag force expressions applied to macrophytes were performed using TELEMAC-2D.

IFSTTAR (now Université Gustave Eiffel)

End-of-study engineering school internship

Champs-sur-Marne, France

Feb. 2019 - Jul. 2019

- **Title:** CFD simulations and experimental measurements in the climatic chamber Sense-City
- **Supervision:** Dr. Julien Waeytens (Université Gustave Eiffel)

- **About:** Numerical simulations of the climatic chamber Sense-City airflow on Code_Saturne software using RANS-type turbulence models. Numerical results compared to measurements with 1D and 3D anemometers.

Center of Flow Simulation
ERASMUS University Project

Düsseldorf, Germany
 May 2018 - Jul. 2018

- **Title:** Numerical resolution of a thermoelectric generator (TEG) by finite volume method in 1D
- **Supervision:** Prof. Dr.-Ing. habil. Ali Cemal Benim (University of Applied Sciences Düsseldorf)
- **About:** Predict the voltage and current generated from a heat flux in a TEG with the finite volume method considering the temperature dependencies of semiconductor properties (electrical/thermal conductivity, Seebeck coefficient).

Laboratoire d'Electronique et nanoPhotonique Organique
First-year engineering school internship

Gif-sur-Yvette, France
 Jun. 2017 - Jul. 2017

- **Title:** Optimization of the energy efficiency of nanoscale light sources by epitaxy
- **Supervision:** Dr. Simon Vassant (CEA Paris-Saclay)
- **About:** Study of the depositing conditions of organic molecules on substrates, to control and organise them by molecular-beam epitaxy in order to improve their luminescence properties.

PUBLICATIONS

Journal papers

Streichenberger, B., Chakir, R., **Jouy, B.**, Waeytens, J. (2021), *Simulation and Validation of CFD turbulent airflow at pedestrian level using 3D ultrasonic anemometer in the controlled urban area "Sense-City"*, Journal of Wind Engineering and Industrial Aerodynamics **219**:104801–.