Rafael Galleze

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https://rafaelgalleze.github.io/website/

SCIENTIFIC INTERESTS

Calculus of variations

Optimization under constraints, optimal control, geodesics, eikonal equation, elasticity.

Lagrangian and hamiltonian mechanics

Hamiltonian systems, celestial mechanics.

Fluid mechanics

Euler and Navier-Stokes equations, conservation laws, entropy.

FORMATION

Master - Mathematics and interactions   **Sep. 2021 – Jun. 2023**

Program Analysis, Partial Differential Equations, Probability   *University of Bordeaux*

Dont notamment :

- Tools for the analysis of (non-)linear PDE
  - Applications to fluid dynamics, Leray and Kato's theorems, paradifferential calculus, anisotropic/inhomogeneous N-S.
  - Spectral theorem and applications.

- Semigroup theory and control.
- Harmonic analysis, Calderon-Zygmund operators, Paley-Littlewood theory.
- Reading seminary on an introduction to microlocal analysis, pseudo-differential operators.

Bachelor's Degree in Mathematics   **Sep. 2019 – May 2021**

Program Fundamental Mathematics, Semesters 3 to 6   *University of Bordeaux*

Ingineering School   **Sep. 2018 – Mar. 2019**

Professional cooperative engineering training   *CESI, Angoulême, France*

CPGE (preparatory classes for engineering school contests)   **Sep. 2014 – May. 2016**

Program Mathematics Physics, option Computer Science   *Lycée La Martinière Monplaisir, Lyon, France*

PROFESSIONAL EXPERIENCE

Research Internship   **March 1st, 2023 – June 8th, 2023**

Internship (under the supervision of Mathieu Colin)   *Institut Mathématique de Bordeaux, France*

- Research Internship. Orbital stability of standing waves for a nonlinear Maxwell-Schrödinger system.
- Master's thesis : https://rafaelgalleze.github.io/website/pdf/MastersThesis.pdf

Voluntary Initiation Internship to Research   **Mar. 2021 – Jul. 2021**

Trainee   *University of Bordeaux, France*

- Initiation Internship to Research. Study of shock behaviours in partial differential equations.

Short term jobs   **Jan. 2017 – Jul. 2017**

Temporary worker   *(Lyon, France)*

Private lessons   **Feb. 2015 – Jun. 2015**

Help to homework and study, mathematics and physics, highschool and first Bachelor's Degree levels   *Lyon, France*

SKILLS

Languages: french (native), english (Fluent. TOIEC score : 965).

Programming languages: Python (Intermediary. Libraries matplotlib, scipy, numpy).

OTHER INTERESTS

Sport: Vovinam Viêt Võ Đao (martial art, 12 years of practice).

Arts: Music composition for short films, painting, wood-carving.

Popular science: to adjust to any type of audience in order to convey the ideas of mathematics and physics concepts. Set aside the technicalities.