

Gaby Launay

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📄 gabylaunay.github.io
26 years old

Current situation : Teaching assistant

Research interest on chaos theory applied to acoustic-driven cavity flows.

Research experiences

2016–today Teaching assistant.

Non-linear dynamics theory applied to the transition to chaos of acoustic-driven cavity flows.

Laboratory : Dept. of complex fluids and transfer, LMFA, Lyon, France.

2013–2016 PhD in fluid mechanics.

Interaction between a free-surface flow and an emerging obstacle : Experimental study of the evolution of the structure and dynamics of the horseshoe vortex.

Defended the 17th November 2016 at the “Ecole Centrale of Lyon” (France).

Laboratory : LMFA, Lyon, France

Jury members : Pr. Jacques Boree, *Reporter, President*

Pr. Lionel Schouveiler, *Reporter*

Ass. Pr. Hélène Roux, *Examiner*

Ass. Pr. Emmanuel Mignot, *Examiner*

Pr. Richard Perkins, *Advisor*

Pr. Nicolas Rivière, *Co-advisor*

2012–2013 Master internship in fluid mechanics.

Experimental study of the properties of a shear thinning fluid in HIT (Homogeneous and Isotropic Turbulence) by PIV (Particle Image Velocimetry).

Laboratory : LMFA, Lyon, France.

Supervisor : Pr. Serge Simoens

Academic background

2012–2013 Master degree in fluid mechanics, UCBL (Claude Bernard University of Lyon).

Courses : Flow stability, experimental methods (PIV, hot wire, LDA), turbulence, statistical and physical mechanics and numerical fluid mechanics.

2011–2012 Internship in numerical development, 6 months.

Implementation of a turbulence model in an innovative CFD code (Finite pointset method).

Company : ESI Group, Lyon, France.

2008–2013 Mechanical engineer, INSA (National Institute of Applied Sciences), Lyon.

2008 Scientific high school degree.

Teaching experience

2016–2017 **Teacher assistant in fluid mechanics, INSA, Lyon.**

Master level :

144h of laboratory (head loss, centrifugal pump, debit measurement)

96h of tutorials (fluid static and kinematic, NS equations, notions of turbulence, turbo-machinery, boundary layer)

2013–2016 **Teaching in fluid mechanics, INSA, Lyon.**

Master level : 92h of practical work, 44h of tutorials

Bachelor level : 56h of engineering projects (as supervisor)

2013–2016 **Hydraulic technician training.**

Technician from EDF company :

40h of practical work (debit measurement, head loss, Bernoulli equation)

Supervising

2016–2017 **Master degree internship.**

Chaotic mixing on acoustic-driven cavity flows.

Co-directed by Pr. Florence Raynal.

2014–2015 **Master degree internship.**

Super-critical flow around emerging obstacles. (Associated publication below)

Co-directed by Pr. Nicolas Rivière.

2013–2014 **Supervision of a TIPE (supervised personal work of initiative).**

Validation of velocity profiles measured on a developing boundary layer.

Project of a student in preparatory class.

Communications

International communications

- Mignot, E., W. Cai, **G. Launay**, N. Riviere, and C. Escauriaza.
Coherent Turbulent Structures at the Mixing-Interface of a Square Open-Channel Lateral Cavity. *Physics of Fluids* 28, n° 4 (2016) : 045104.
- Rivière N., G. Vouaillat, **G. Launay** and E. Mignot.
Emerging Obstacles in Supercritical Open-Channel Flows : Detached Hydraulic Jump versus Wall-Jet-Like Bow Wave. *Journal of Hydraulic Engineering*, 2017, 04017011.

Submitted communications

- Launay, G., E. Mignot, N. Riviere and R. Perkins.
On the laminar horseshoe vortex around an emerging obstacle : Experimental investigation of the regime transitions. Submitted to “*Journal of Fluid Mechanics*”.
- Launay, G., E. Mignot and N. Riviere.
Laminar free-surface flow around emerging obstacles : Impact of the obstacle elongation. Submitted to “*Physics of Fluids*”.

Conferences

- Launay, G., E. Mignot and N. Riviere.
Flow around emerging obstacles : Experimental study of the laminar horseshoe vortices dynamic.
11th European fluid mechanics conference, 12th to 16th september 2016, Seville, Spain.
- Launay, G., E. Mignot and N. Riviere.
Interaction between a free-surface flow and an emerging obstacle : Experimental study of the horseshoe vortex structure
22th French congress of mechanics, 24th to 28th august 2015, Lyon, France.

Seminaries and presentations

Feb. 2016 *Invited speaker at the LEGI, Grenoble, France.*

Nov. 2014 *Internal seminar at the LMFA.*

Oct. 2014 *Invited speaker for the Runoff and thin-films research group (GDR).*

Mars 2014 *Invited speaker at the LEGI.*

Skills

French Native language

English Read, spoken, written (TOEIC : 920)

Experimental Laser velocimetry (PIV), Velocimetry by fluorescence (FPIV), Velocimetry acoustic by Doppler effect

Data Non-linear time series analysis, Coherent structures detection, Image analysis, Complex analysis data visualization, Statistical analysis

Languages Python, Matlab, C++, ELisp

Publishing Emacs, Latex, Inkscape (vectorial drawing), Gimp, Matplotlib.