Ronan Monjarret

Born on July 25th, 1987
Nationality : French

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PhD in Applied Mathematics
Aeronautical Engineer - Agrégé in Mathematics

Teaching

2016- **Mathematics professor in CPGE**, intensive course to enter the most prestigious engineering schools, at lycée Gustave Eiffel (Bordeaux, France).

2016- **Selection boards**, Design and correction of national mathematics competitions (written and oral), for engineering students recruitment and teachers recruitment.

2014-2016 **Mathematics professor in CPGE**, at lycée agricole Blanquefort (Bordeaux).

2013-2016 **Oral tests in CPGE**, at lycée Louis Barthou (Pau, France) and at lycée Michel de Montaigne (Bordeaux).

2011-2014 **Teaching assistant**, Paul Sabatier University (Toulouse, France).

- 2012-2014 **Algebra/analysis**
- 2011-2013 **General mathematics**
- 2011-2012 **Differential/integral calculus**

Education

2011-2014 **Paul Sabatier University** (Toulouse, France). PhD in applied mathematics.
Analysis of the multi-layer shallow water model with free surface : Treatment of the open boundaries [link].
In collaboration with the French naval hydrographic and oceanographic service (SHOM). Financed by the French general delegation for armaments (DGA)
Advisors : F. Chazel, R. Baraille & J.P. Vila.
Defended on december 16^{th}, 2014 [link]: grade *right honourable*.

2010-2011 **Paul Sabatier Univ.**, Degree in mathematics (known as Agrégation : civil service competitive examination for mathematics teachers in French education system). Option: scientific computing.

2009-2010 **Paul Sabatier Univ.**, Master degree in applied mathematics, with high distinction. Topics: partial differential equations, mathematical and numerical modeling.

2007-2010 **ISAE-Supaero** (Toulouse). Master degree in aeronautical engineering. Specialisation in aerodynamics and fluid mechanics.

Research & Industry

2011-2014 **PhD in applied mathematics**, Paul Sabatier Univ./SHOM.
Title: *The multi-layer shallow water model with free surface : Treatment of the open boundaries*, [link].

2010 (6 months) **Research internship**, Paul Sabatier Univ.
Hyperbolicity of the two-layer shallow water model with free surface.
Advisors: J.M. Roquejoffre & J.P. Vila, F. Chazel.

2009 (2 months) **Engineering internship**, Liebherr Aerospace, Toulouse.
Automation of turbomachinery pre-sizing.

Publications

- *Local well-posedness of the two-layer shallow water model with free surface*, SIAM Journal on Applied Mathematics, 2015 [link 1 and link 2].
- *Hyperbolicity of the multi-layer shallow water model with free surface under weak density-stratification*, submitted [link].

Communications

Feb. 2014 **OSM2014** - Ocean Sciences Meeting, Honolulu, Hawaii, U.S.A.

Nov. 2013 **MCPIT2013** - Modeling, control and inverse problems for the planet Earth in all its states, Henri Poincaré Institute, Paris, France. Invited speaker.

Nov. 2013 **MathGeo2013** - Mathematics and Geosciences: global and local perspectives, ICMAT University, Madrid, Spain.

Sept. 2013 **NumHyp2013** - Numerical approximations of hyperbolic systems with source terms and applications, RWTH University, Aachen, Germany.

Jul. 2012 **Multiflow** - Summer school on wave patterns and interactions in advection-dominated flows, Volos, Greece.

Popularisation

2013-2014 **Les toiles brillent pour tous**, Paul Sabatier Univ. Bring science to people who has little exposure to this culture: hospitals, retirement home and prisons.

2013-2014 **Les champs libres**, Natural History Museum, Toulouse. Scientific animation.

2011-2013 **Hippocampe**, Paul Sabatier Univ. High-school students discovering academic research: semi-autonomous work and presentation to researchers.

Computer skills

Fortran90/77, Java, Caml, Python.

LaTeX, html, Mathematica, Scilab, Matlab.

Linguistic skills

Spanish **Proficient speaker**, level C1 (DELE 2009).

English **Independant speaker**, level B2 (TOEFL 2009).