

Jonathan Gula

Dpt. of Physics, University of Toronto
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Postdoctoral Fellow

Education

- **PhD in physical oceanography and meteorology** LMD, ENS, Paris
Supervisors: Prof. Vladimir Zeitlin and Riwal Plougonven 2006 - Oct. 22, 2009
- **Master's degree in Ocean, Atmosphere and Climate** Université Paris VI
Master's speciality: Dynamics of the ocean and atmosphere 2005-2006
- **Agrégation de Sciences Physique** ENS Cachan
Superior diploma for teaching Physics and Chemistry in high school. 2004-2005
- **Maitrise in fundamental physics** ENS Cachan
equivalent of first year of master in fundamental physics 2003-2004
- **Licence in Physics** ENS Cachan
equivalent of bachelor's degree in physics 2002-2003

Work Experience

- **Postdoctoral fellow** University of Toronto
Contact: Prof. W. R. Peltier since Nov. 2009
- **Research assistant** LMD, ENS, Paris
Supervisors: Prof. Vladimir Zeitlin and Riwal Plougonven 2006 - 2009
 - Title: Ageostrophic instabilities of baroclinic flows in the atmosphere and ocean: Nonlinear evolution, secondary cyclogenesis and inertia-gravity waves emissions.
- **Teaching assistant** Université Paris VI
Introduction to physics, BS (192h) 2006 - 2009
 - Leading groups of 20 to 30 students in exercices, laboratory experiments and making exams.
- **Research assistant** LMD, ENS, Paris
Supervisors: Prof. Vladimir Zeitlin and Riwal Plougonven April - july 2006
 - Title: Study of the Rossby-Kelvin instability
- **Teaching assistant** Lycée Janson de Sailly
Physics and chemistry (80h) 2005-2006
 - Oral exams for undergraduate students
- **Research assistant** G.F.D. Group at the University of Western Australia
Supervisor: Prof. Greg Ivey April - august 2004
 - Title: Periodic Forcing of Baroclinic Basin-Scale Waves in a Rotating Stratified Basin
- **Research assistant** Rock Mechanics Group at the I.P.G.P.
Supervisor: Prof. Jean-Pierre Vilotte June - july 2003
 - Title: Experimental study of the electrico-sismic response in a grès de Fontainebleau

- **Computer scientist**
Database administrator
- **Supervisor**
Children's holliday camp

Schneider Electric, Montpellier
July - august 2000
Pohénégamook, Québec
July - august 1999

Skills

Languages: French (mother tongue) - English - Basic working knowledge of Spanish

Computer: Operating systems: Linux, MacOS, Windows.

Languages: Fortran, L^AT_EX, C, Shell, Html, Php.

Software: Matlab, Mathematica, Mapple, LabVIEW, OpenOffice, MS Office, Photoshop, Illustrator

Other: Driving licence - Motorbike licence - Scuba diver CMAS***

Oral Communications

Sep. 02, 2009 Instabilities of coastal currents, nonlinear evolution and vortex formation.

Oral at the International Conf. on High-Reynolds Number Vortex Interactions, Brest, France.

Aug. 31, 2009 Existence, propagation and collisions of localized dipolar vortices on the f-plane.

Poster at the International Conf. on High-Reynolds Number Vortex Interactions, Brest, France.

Apr. 24, 2009 Instabilities of two-layer shallow-water flows with vertical shear in the rotating annulus.

Oral at the European Geosciences Union General Assembly, Vienna, Austria.

Jan. 9, 2009 Instabilities of two-layer shallow-water flows with vertical shear in the rotating annulus.

Oral at The Dynamics of Rotating Fluids Meeting, University College London.

Dec. 9, 2008 Instabilities of two-layer shallow-water flows with vertical shear in the rotating annulus.

Seminar at the Laboratoire des Ecoulements Géophysiques et Industriels (LEGI), Grenoble, France.

Dec. 02, 2008 Instabilities of two-layer shallow-water flows with vertical shear in the rotating annulus.

Seminar at The Mathematical Institute, University of Oxford, UK.

Novc. 5, 2007 Ageostrophic instabilities of a front in a stratified rotating fluid.

Seminar at The School of Mathematics, University of Edinburgh, UK.

Aug. 31, 2007 Ageostrophic instabilities of a front in a stratified rotating fluid.

Oral at the Congrès Français de Mécanique, Grenoble, France.

Apr. 18, 2007 Ageostrophic instabilities of balanced flows and their nonlinear evolution.

Poster at the European Geosciences Union General Assembly, Vienna, Austria.

Publications

- Ribstein, B., Gula, J. & Zeitlin, *Existence and properties of modons in rotating shallow water: results of high-resolution numerical simulations*, 2009, Submitted to Physics of Fluids.
- Gula, J., Zeitlin, V. & Bouchut, F., *Instabilities of buoyancy driven coastal currents and their nonlinear evolution in the two-layer rotating shallow water model. Part II. Active lower layer*, 2009, Submitted to J. Fluid Mech.

- Gula, J. & Zeitlin, V., *Instabilities of buoyancy driven coastal currents and their nonlinear evolution in the two-layer rotating shallow water model. Part I. Passive lower layer.*, 2009, Submitted to J. Fluid Mech.
- Gula, J., Zeitlin, V. & Plougonven, R., *Instabilities of two-layer shallow-water flows with vertical shear in the rotating annulus*, 2009, Journal of Fluid Mechanics, In Press.
- Gula, J., Plougonven, R. & Zeitlin, V., *Ageostrophic instabilities of fronts in a channel in the stratified rotating fluid.*, 2009, Journal of Fluid Mechanics, 627, 485-507.
- Gula, J., Plougonven, R. & Zeitlin, V., *Ageostrophic instabilities of a front in a stratified rotating fluid.*, 18ème Congrès Français de Mécanique, 27-31 août 2007, Grenoble, France, (CD-ROM proceedings).
- Wake, G. W., Gula, J. & Ivey, G. N., *Periodic Forcing of Baroclinic Basin-Scale Waves in a Rotating Stratified Basin*, 15th Australasian Fluid Mechanics Conference, The University of Sydney, 13-17 December 2004, CD Rom: AFMC00097