

Flavien Gouillon

CONTACT INFORMATION

42 av Gaspard Coriolis
Site de Météo-France
SHOM/HOM/REC
Service Hydrographique et Océanographique de la Marine
(SHOM)

31057 Toulouse France

Voice: +336 50 57 66 28

Fax: +335 61 33 29 16

E-mail: flavien.gouillon@shom.fr

<http://www.coaps.fsu.edu/~gouillon>

RESEARCH INTERESTS

Ocean circulation, numerical modeling, tidal dynamics, internal wave dynamics and energetics, shelf circulation and dynamic.

EDUCATION

Florida State University, Tallahassee, Florida, USA

PhD, Physical Oceanography, May 2010

- Dissertation Topic: *Internal wave propagation and numerically induced diapycnal mixing in Oceanic General Circulation Models*
- Advisor: Dr. Eric P. Chassignet

M.S., Computer Science (*cum laude*), Marseilles, France, July 2004

B.S., Marine Environment Science, Marseilles (with a year at UEA, Norwich, UK, with the ERASMUS program), June 2003

HONORS AND AWARDS

- Invited to the 6th Physical Oceanography Doctoral Seminar, Hawaii, 2010
- Physical Oceanography Outstanding student Award, 2008
- Oceanography Student Travel Award, 2008
- Sigma Xi honor society, inducted 2008
- 1st place for best talk at the 3rd FSU Oceanography Symposium, November 2008
- Vice President, Thalassic Society, January 2007 - January 2009
- 2nd place for best poster at the 2nd FSU Oceanography Symposium, November 2007
- Free participation at the *Modern Mathematical Methods in Oceanography Summer School*, August 2006, held at Breckenridge, Colorado, USA.

PROFESSIONAL SOCIETIES

American Geophysical Union, Member

European Geophysical Union, Member

EMPLOYMENT

Service Hydrographique et Océanographique de la Marine (SHOM)
OMP/LEGOS/SHOM/REC, Toulouse, France

Post-doctoral fellow with Y. Morel and R. Baraille

June 2010 - present

I work within the EPIGRAM project which focuses mainly on the ocean dynamics of the Bay of Biscay. Specifically, my interests are on the surface ocean layer dynamics. To better understand the mixed layer dynamics, I use both an observational and modeling (idealized and realistic experiments) approach.

Center for Ocean-Atmospheric Prediction Studies (COAPS)

Florida State University, Tallahassee, Florida USA

Graduate Student / Research Assistant

Aug 2005 - May 2010

My dissertation focused on the documentation of internal gravity wave propagation representation in the three different classes of numerical ocean models as a function of model grid resolution. The dissertation also provide estimates of the magnitude of the spurious diapycnal mixing induced by

the propagation of these internal gravity waves when using fixed vertical coordinate models. It also included PhD level coursework, research projects, and supervision of summer interns.

RESEARCH CRUISE **R/V Bellows**, Suwannee River

Student Research Scientist

April 2008

Data collection (CTD and floats) at the Suwannee river. Development of an interface Matlab/Google maps to track floats in real time.

- Chief Scientist: Dr. Nicolas Wienders

TAO-TOGA Research Cruise

R/V Ka'imimoana, Tropical Pacific

Student Research Scientist

June 2006 - July 2006

Assistant in CTD operations group. Helped in all CTD operations including deployment, recovery, console operations, and station planning. Assisted in water sampling for nutrients, salinity, oxygen, and dissolved organic carbon.

- Chief Scientist: Curran Frey and Brian Powers

**OTHER
EXPERIENCE**

Scholars Program

SHOM, Toulouse, France

March 2011 - August 2011

Mentor of a Master II student from Paris VI University. 'Modeling river plume dynamics: an emphasis on numerical schemes optimality and performance'.

Florida State University (COAPS), Tallahassee, Florida USA

Summer 2006-2008

Mentor for six French students with various background (University and engineering school). The internships were from 14 to 24 weeks. For more details on their work, contact me.

**PEER-REVIEWED
PUBLICATIONS**

Lahaye, S., **Gouillon, F.**, Baraille, R., Pichon, A., Pineau-Guillou, L., Morel, Y., 2010: *A numerical scheme for modelling tidal wetting and drying*, Journ. Geophys. Res. - Oceans. Accepted. Main corresponding author.

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, 2011: *Correction to "Forced tidal response in the Gulf of Mexico"*, Journ. Geophys. Res. - Oceans, vol. 116, C01002, doi:10.1029/2010JC006855.

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, 2010: *Forced tidal response in the Gulf of Mexico*, Journ. Geophys. Res. - Oceans, vol. 115, C10, doi:10.1029/2010JC006122.

Gouillon, F., 2010: Internal wave propagation and numerically induced diapycnal mixing in OGCMs. PhD Dissertation, 99 pp.

**OTHER
PUBLICATIONS**

Boutet, M., **Gouillon, F.**, Baraille, R., Morel, Y., 2011: *Comparison of two methods to implement rivers in Oceanic General Circulation Models*, research activities in atmospheric and ocean modeling. CAS/JSC working group on numerical experimentation.

Gouillon, F., A. Bozec, B. Vanniere, and E.P. Chassignet, 2009: *Modeling the M_2 and O_1 barotropic and baroclinic tides in the Gulf of Mexico using the HYbrid Coordinate Ocean Model (HYCOM)*, research activities in atmospheric and ocean modeling. CAS/JSC working group on numerical experimentation.

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, 2006: *Modeling tides on semi-enclosed basin: a case study of the Gulf of Mexico*, research activities in atmospheric and ocean modeling.

CAS/JSC working group on numerical experimentation.

ORAL AND POSTER
COMMUNICATIONS

Gouillon, F., June 2011: *Upper ocean dynamics in the bay of Biscay* (Talk). EPIGRAM workshop meeting, Ile de Ré (France).

Gouillon, F., February 2011: *Toward a unified HYCOM framework* (Talk). Layered Ocean Meeting User's Workshop, Miami (FL, USA).

Gouillon, F., Y. Morel, R. Baraille, February 2011: *Ocean surface dynamics in the Bay of Biscay* (Talk). Layered Ocean Meeting User's Workshop, Miami (FL, USA).

Gouillon, F., E.P. Chassignet, February 2011: *Diagnosing the spurious diapycnal mixing in OGCMs* (Seminar). LOCEAN, Paris, France.

Gouillon, F., E.P. Chassignet, January 2011: *Diagnosing the spurious diapycnal mixing in OGCMs* (Seminar). LPO, Brest, France.

Gouillon, F., October 2010: *Internal wave propagation and numerically induced diapycnal mixing in OGCMs* (Talk). PODS VI, Honolulu (Hawaii, USA).

Gouillon, F., *Modeling tides in the Gulf of Mexico* (Talk). SouthEast Coastal Oceanography and Meteorology Conference, Tallahassee (Florida, USA), May 2010.

Gouillon, F., E.P. Chassignet, February 2010: *Diagnosing the spurious mixing induced by the propagation of internal waves in the Regional Ocean Modeling System (ROMS)* (Talk). American Geosciences Union, Ocean Sciences Meeting, Portland (Oregon, USA).

Gouillon, F., E.P. Chassignet, November 2009: *Diagnosing the spurious mixing in the Regional Ocean Modeling System (ROMS)* (Poster). 4th FSU Oceanography Symposium, Tallahassee (FL, USA).

Gouillon, F., **E.P. Chassignet**, July 2009: *Internal wave modeling in OGCMs* (Talk). Woods Hole Oceanographic Institution Geophysical Fluid Dynamics Program, Woods Hole (MS, USA).

Gouillon, F., E.P. Chassignet, June 2009: *Internal wave modeling in OGCMs* (Talk). Layered Ocean Meeting User's Workshop, Miami, Florida, USA.

Gouillon, F., E.P. Chassignet, and L. St. Laurent, April 2009: *Internal wave modeling in OGCMs* (Poster). CLIVAR Working group on Ocean Model Development, Exeter (England).

Gouillon, F., E.P. Chassignet, April 2009: *Internal wave modeling in OGCMs* (Talk). European Geosciences Union, General Assembly Meeting, Vienna, Austria.

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, December 2008: *Forced tidal response in the Gulf of Mexico* (Poster). American Geosciences Union, Fall meeting, San Francisco (California, USA).

Gouillon, F., E.P. Chassignet, November 2008: *Internal wave generation and propagation: analytical and numerical computations* (Talk). 3rd FSU Oceanography Symposium, Tallahassee (FL, USA).

Gouillon, F., A. Bozec, B. Vanniere, and E.P. Chassignet, November 2008: *Modeling the M_2 and O_1 barotropic and baroclinic tides in the Gulf of Mexico using HYCOM* (Poster). 3rd FSU Oceanography Symposium, Tallahassee (FL, USA).

Gouillon, F., E.P. Chassignet, March 2008: *Numerical representation of internal waves in the HYbrid Coordinate Ocean Model (HYCOM)* (Talk). American Geosciences Union, Ocean Sciences Meeting, Orlando (FL, USA).

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, December 2008: *Forced tidal response in the Gulf of Mexico* (Poster). 2nd FSU Oceanography Symposium, Tallahassee (FL, USA).

Gouillon, F., S.L. Morey, D. Dukhovskoy, and J.J. O'Brien, September 2007: *Tides in the Gulf of Mexico* (Seminar). (Seminar), UEA, Norwich, England.

ACTIVITIES

Reviewer

- Journal of Geophysical Research - Oceans
- NSF proposal

OTHER SKILLS

Computer Skills

- Languages: Fortran, IDL, HTML, C and Shell scripting
- Applications: MATLAB, L^AT_EX, Microsoft Office products, Adobe products
- Operating Systems: Windows, Unix/Linux.

LANGUAGES

- French: native language English: Fluent Spanish: intermediate

OTHER

U.S.A. Soccer Youth National Licensed Coach