

Pierre Flament

Department of Oceanography, University of Hawaii at Manoa

Abbreviated curriculum vitae, March 2007

Education

- 1987: Post-doctoral scholar, Woods Hole Oceanographic Institution.
- 1986: Ph.D. in Physical Oceanography, Scripps Institution of Oceanography.
- 1980: M.Sc. in Theoretical Physics, Free University of Brussels.

Positions held

- 2005-: professor, Department of Oceanography, University of Hawaii at Manoa.
- 2004-2006: program director, Physical Oceanography Program, National Science Foundation.
- 1998-2004: associate professor, University of Hawaii at Manoa.
- 1998-2000: senior scientist and director, Département d'Océanographie Spatiale, IFREMER.
- 1989-1997: assistant professor, University of Hawaii at Manoa.
- 1987-1988: post-doctoral scholar, Woods Hole Oceanographic Institution.
- 1982-1986: research assistant, Scripps Institution of Oceanography.
- 1983: summer GFD fellow, Woods Hole Oceanographic Institution.
- 1981: fellow, Belgian American Educational Foundation.
- 1980: visiting researcher, Ecole Normale Supérieure de Paris.

Research interests

Dynamics of the surface layer and air-sea interactions; coastal, equatorial and island upwelling; mesoscale structures; satellite and radar remote sensing.

Selected refereed publications

- Chavanne, C., I. Janekovic, P. Flament, M. Kuzmic, P.-M. Poulain, and K.-W. Gurgel,, "Tidal Currents in the Northern Adriatic Sea: High Frequency Radar Observations and Numerical Model Predictions," *J. Geophys. Res.* (2007). (in press)
- Chavanne, C. and P. Flament, "Tidal and Mesoscale Currents in the Kauai Channel," *J. Phys. Ocean.* (2007). (to be submitted)
- Aucan, J., M. Merrifield, D. Luther, and P. Flament, "Tidal mixing events on the deep flanks of Kaena ridge, Hawaii," *J. Phys. Ocean.*, vol. 36, pp. 1202-1219 (2006).
- Dutrieux, P., C. Menkes, J. Vialard, P. Flament, and B. Blanke, "Lagrangian study of Tropical Instability Vortices in the Atlantic ocean," *J. Phys. Ocean.* (2006). (submitted)
- Lee, C.M., F. Askari, J. Books, S. Carniel, B. Cushman-Roisin, C. Dorman, J. Doyle, and P. Flament, "Northern Adriatic response to a wintertime Bora wind event," *EOS, Trans. Am. Geophys. Union*, vol. 86, p. 157,163,165 (2005). (13 additional authors)
- Bentamy, A., Y. Quilfen, and P. Flament, "Scatterometer wind fields: a new release over the decade 1991-2001," *Can. J. Remote Sensing*, vol. 28, pp. 431-449 (2002).

- Chavanne, C., P. Flament, R. Lumpkin, B. Dousset, and A. Bentamy, "Scatterometer observations of wind variations induced by oceanic islands: implications for wind-driven ocean circulation," *Can. J. Remote Sensing*, vol. 28, pp. 466-474 (2002). (SOEST contr. 5962, JIMAR contr. 02-341)
- Flament, P., "A state variable for characterizing water masses and their diffusive stability: spiciness," *Progr. Oceanog.*, vol. 54, pp. 493-501 (2002). (SOEST contr. 5323)
- Menkes, C., S. Kennan, P. Flament, Y. Dandonneau, S. Masson, B. Biessy, E. Marchal, G. Eldin, J. Grelet, Y. Montel, A. Morlière, A. Lebourges-Dhaussy, C. Moulin, G. Champalbert, and A. Herbrand, "A whirling ecosystem in the equatorial Atlantic ocean," *Geophys. Res. Let.*, vol. 29, pp. 48.1-48.4 (2002). (SOEST contr. 5935, JIMAR contr. 02-340)
- Seki, M.P., R. Lumpkin, and P. Flament, "Hawaii cyclonic eddies and blue marlin catches: the case study of the 1995 Hawaiian International Billfish Tournament," *J. Oceanogr.*, vol. 58, pp. 739-745 (2002). (SOEST contr. 6001, JIMAR contr. 02-342)
- Flament, P., C. Lumpkin, J. Tournadre, and L. Armi, "Vortex pairing in an anticyclonic shear flow: discrete subharmonics of one pendulum day," *J. Fluid Mech.*, vol. 440, pp. 401-409 (2001). (SOEST contr. 5484, JIMAR contr. 01-338)
- Lumpkin, R. and P. Flament, "Lagrangian statistics in the central North Pacific," *J. Mar. Syst.*, vol. 29, pp. 141-155 (2001). (SOEST contr. 5077, JIMAR contr. 00-333)
- Barton, E.D., G. Basterretxea, P. Flament, E.G. Michelson-Jacob, B. Jones, J. Aristegui, and F. Herrera, "The lee region of Gran Canaria," *J. Geophys. Res.*, vol. 105, pp. 17173-17193 (2000). (SOEST contr. 5130)
- Flament, P. and L. Armi, "The shear, convergence and thermohaline structure of a front," *J. Phys. Oceanog.*, vol. 30, pp. 51-66 (2000). (SOEST contr. 4898)
- Kennan, S. and P. Flament, "Observations of a tropical instability vortex," *J. Phys. Oceanog.*, vol. 30, pp. 2277-2301 (2000). (SOEST contr. 4900)
- Lumpkin, R., P. Flament, R. Kloosterziel, and L. Armi, "Vortex Merging in a 1 1/2 layer fluid on an f-plane," *J. Phys. Oceanog.*, vol. 30, pp. 233-242 (2000). (SOEST contr. 4897)
- Flament, P., S.C. Kennan, R.A. Knox, P.P. Niiler, and R.L. Bernstein, "The three-dimensional structure of an upper ocean vortex in the tropical Pacific Ocean," *Nature*, vol. 383, pp. 610-613 (1996). (SOEST contr. 4243)

Grant and contract activity

I have been principal investigator on 19 federal grants and contracts, totaling \$4,880,000, and co-investigator on 9 additional grants, totaling \$3,320,000. Recent federal grants were:

Organization of a cruise on board R/V Melville to provide research opportunities and train scientists from Philippines Marine Institutions ; submitted to the Office of Naval Research; P.I.: P. Flament; pending; period: 2007-11 to 2007-12; amount: \$41,396.

Acquisition of High Frequency Radar components for observing surface currents and eddies in sea straits of interest to the U.S. Navy (DURIP) ; submitted to the Office of Naval Research; P.I.: J. Sprintall; current (through Scripps); period: 2006-09 to 2007-09; amount: \$154,051.

HF radar measurements of surface currents in the Philippines Archipelago strait ; submitted to the Office of Naval Research; P.I.: P. Flament; current; period: 2006-04 to 2008-12; amount: \$570,000.

Ocean circulation features forced by strong topographically-induced wind stress curl OCE-0426112; submitted to the National Science Foundation; P.I.: P. Flament; current; period: 2004-10 to 2007-09; amount: \$152,130.

Intergovernmental Mobility Assignment OCE-0453848; submitted to the National Science Foundation; P.I.: P. Flament; expired; period: 2004-08 to 2006-08; amount: \$246,842.

Adriatic Mesoscale Experiment: HF radar and remote sensing of surface currents, winds and temperature ; submitted to the Office of Naval Research; P.I.: P. Flament; expired; period: 2002-01 to 2005-12; amount: \$469,000.

High Frequency RADAR observations of surface currents at tidal and subtidal frequencies OCE-9819534; submitted to the National Science Foundation; P.I.: P. Flament; current; period: 2001-07 to 2007-06; amount: \$642,000.

Other research activities

I have authored and co-authored 68 non-refereed publications and abstracts, and 15 data reports, of which 5 were on CD-ROM, in support of WOCE and TOGA. I have delivered 48 communications at major scientific meetings and given 70 invited lectures at various institutions in the world. I have participated in 29 oceanographic cruises, research aircraft flights and field expeditions, totaling 241 days at sea, of which 152 days were as chief scientist.

Theses and dissertations supervised

I have chaired, funded and supervised 2 Ph.D. dissertations (a 3rd is reaching completion), 7 M.Sc. theses, and 2 B.Sc. theses. I have served in the committees of 12 Ph.D. and 4 M.Sc. students.

Teaching innovation and courses taught

I developed two graduate courses *Satellite Oceanography* and *Oceanographic Instrumentation and Technology*, combining lectures, student presentations, and labs. I improved the core course *Introductory Physical Oceanography*, adding digital teaching aids, and sessions using Matlab. I developed a new undergraduate course *Interpretation of Earth System Science Databases*, adapting my graduate level teaching techniques.

- Interpretation of Earth System Science databases OCN-363 (2000 to 2005), total 46 students, mean evaluation 4.80/5.
- Introduction to Physical Oceanography OCN-620 (1995 to 2005), 71 students, 4.16/5.
- Oceanographic Instrumentation and Technology OCN-664 (1992 to present), 17 students, 4.83/5.
- Satellite Oceanography OCN-663 (1989 to present), 36 students, 4.61/5.

Journal, book and proposal referee

I have reviewed 58 manuscripts and book chapters for 10 different journals and publishers. In 2001, I was guest editor to the Canadian Journal of Remote Sensing, for the special issue on Remote Sensing of Ocean Winds (20 manuscripts).

I have reviewed 90 proposals for various funding agencies, including 58 for NSF and 27 for NASA. I have participated, as panelist or as program director, in 9 proposal review panels in Washington. From 2004 to 2006, I was Program Director in the NSF Physical Oceanography Program, responsible for managing 125 proposals, including 20 awards totaling over \$9,000,000.

Science team activities

I have been a member of the Science Teams of the following Space missions: NASA Shuttle Imaging Radar-C, ESA ERS-2 and Envisat, NRC committee on Synthetic Aperture Radars for Oceanography, NASA Radarsat, German Space Agency Topographic Radar Mission. In addition, I was director of the joint IFREMER/ESA Satellite Oceanography Department, responsible for all low bit rate processing and science products from the ERS satellites.

Conferences and workshop organized

I have organized or co-organized 3 special sessions at major scientific meetings (AGU, EGS, ASLO), 6 topical workshops, and 1 international summer school.