

# *Curriculum Vitae*

## **Pierre-Marie R. G. Poulain**

Department of Oceanography  
Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS  
Borgo Grotta Gigante, 42/c  
34010 Sgonico (Trieste), ITALY  
Phone: +39 040 2140322; Fax: +39 040 2140266  
E-mail: ppoulain@ogs.trieste.it

Born on 26 August 1960 in Charleroi, Belgium

Citizenship: Belgian.

## ***Education***

Ph.D. in Oceanography, University of California San Diego, 1989. Dissertation: Surface circulation phenomena off Baja California as deduced from satellite-tracked drifters, Scripps Institution of Oceanography, 124 pp. Advisor: Prof. P. P. Niiler.

Licence Complémentaire en Océanologie (M.S. in Oceanography), Université de Liège, 1984.

Agrégation de l'Enseignement Supérieur Secondaire (High School Teaching Certificate), Université de Liège, 1983.

Licence en Sciences Physiques (B.S. in Physics), Université de Liège, 1982. Undergraduate dissertation: Modélisation des couches superficielles de l'océan : application à l'étude de la thermocline dans la baie de Calvi, Université de Liège, 135 pp. Advisor: Prof. J. C. J. Nihoul.

## ***Honors and Fellowships***

Outstanding Research Achievement Award, Naval Postgraduate School, Monterey, 1998.

Fellowship, NATO-ASI "Modelling the Ocean General Circulation and Geochemical Tracer Transport". Les Houches, France, 1988.

Grant, Foundation for Research and Educational Exchange, Brussels, 1984.

Fellowship, Institut de Recherche Scientifique, Industrielle et Agricole, Belgium, 1983-1984.

Scholarship, NATO course in Air-Sea Transfer Processes, University of Washington, 1982.

## ***Chronology of Professional History***

Consultant, CREST s. r. l., Trieste, Italy, 2009-2010.

President, Società Consortile a r. l. per lo Sviluppo di Tecnologie e Metodologie Marine e Ambientali – STEMMA, Trieste, Italy, 2007-2009.

Vice-Director, Department of Oceanography, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste, Italy, 2006-2009.

Associate Affiliate Graduate Faculty, University of Hawaii at Manoa, Honolulu, Hawaii, 2004-2010.

Senior Scientist in Department of Oceanography, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste, Italy, 2000-present.

Assistant Professor of Oceanography, Naval Postgraduate School, Monterey, USA, 1996-2000.

Scientist in Applied Oceanography Group, SACLANT Undersea Research Centre, La Spezia, Italy, 1992-1996.

Postdoctoral Associate in Physical Oceanography, University of Miami, USA, 1989-1991.

Research Assistant in Physical Oceanography, University of California, San Diego, USA, 1984-1989.

Research Assistant in Geophysical Fluid Mechanics and Climate Modelling, Université de Liège, Belgium, 1982-1984.

Teaching Assistant in Theoretical and General Physics, Université de Liège, Belgium, 1981-1983.

### ***Teaching Activities (1996-present)***

#### *Courses taught at the Naval Postgraduate School*

Remote Sensing of the Atmosphere and Ocean (summer 1996, summer 1997, winter 1998 and summer 1999).

Sound in the Ocean (spring 1997 and spring 1998).

Air/ocean Remote Sensing for USW Curriculum (winter 1997).

Air/ocean Remote Sensing for Multidisciplinary Curricula (summer 1996, winter 1998, winter 1999 and winter 2000).

Descriptive Physical Oceanography (winter 1999 and winter 2000).

#### *Lectures given at Italian Universities*

Course “*Physics of the Oceans*” of Diploma Programme, Abdus Salam International Centre for Theoretical Physics, Trieste, lectures in 2008, 2009, 2010 and 2011.

Course “*Physical Oceanography*” of School of Doctorate - Environmental and Industrial Fluid Mechanics, University of Trieste, 2006-present.

Seminars in Oceanography for the “*Corso di Master in Scienze Ambientali*”, University of Bologna, Ravenna, Academic year 2002-2003.

Seminars in Oceanography for the “*corso integrato di Geofisica Ambientale ed Oceanografia del Corso di Laurea in Scienze Ambientali*”, University of Trieste, Academic year 2000-2001.

Course “*Tecniche di telerilevamento da terra e dal satellite (radar, misure nell'infrarosso, seawifs, scatterometro) e le misure lagrangiane con i flottanti seguiti dal satellite*”, University C'à Foscari, Venice, Academic year 2001-2002.

#### *Thesis supervision*

LT Todd A. Mauerhan, USN, Drifter observations of the Mediterranean Sea surface circulation. Master of Science in Physical Oceanography, March 2000.

LT Jeff M. Leitz, USN, Ionian Sea surface temperature: Satellite and drifter observations, May to October 1995, Master of Science in Physical Oceanography, September 1999.

LT Jason A. Vogt, USN, Adriatic Sea surface temperature: Satellite and drifter observations, May to October 1995, Master of Science in Physical Oceanography, March 1999.

LT Luis Pibernat, Venezuelan Navy, Structure and variability of the mesoscale circulation in the Caribbean Sea as deduced from satellite altimetry, Master of Science in Physical Oceanography, June 1998.

LT Renato Pinto, Brazilian Navy, A P-vector approach to the absolute geostrophic currents in the Adriatic Sea, Master of Science in Physical Oceanography, March 1998.

LT Christopher J. Arends, USN, Iceland-Faeroe front structure and variability, Master of Science in Meteorology and Physical Oceanography, June 1997.

LT Jimmy W. Pelton, USN, A comparison of output from the Los Alamos National Laboratory (LANL) parallel ocean program (POP) model with surface velocity data from drifting buoys in the North Atlantic Ocean, Master of Science in Operations Research, March, 2000.

LT Tom Fisher, USN, Determination of Lake Tahoe shallow water bathymetry using AVIRIS data, Master of Science in Physical Oceanography, December 1999.

LT Bryan A. Brauns, USN, Adriatic Sea current observation using acoustic Doppler current profiler (ADCP) measurements, Master of Science in Physical Oceanography, September 1997.

### ***Research Grants (1996-current)***

Oceanographic Measurements in the Adriatic and Ionian Seas (Jan 1996 – Sep 1997);  
Naval Postgraduate School (\$69,000).

Upper Ocean Circulation in the Adriatic Sea (Jun 1996 – May 1997);  
Naval Oceanographic Office (\$24,800).

Development of Littoral Current Data Base in the Adriatic Sea (Jan 97 – Dec 97);  
Naval Oceanographic Office (\$59,300).

Variability of the Surface Circulation and Temperature in the Adriatic Sea (Mar 1997 – Sep 98); Office of  
Naval Research (\$284,311).

Lagrangian Measurements in Icelandic Waters (Aug 1997 – Aug 2000);  
North Atlantic Treaty Organization (\$5,640).

Lagrangian data analysis in mesoscale prediction studies (Oct 98 – Sep 2000);  
Office of Naval Research (\$56,489).

Adriatic Sea Circulation (Oct 1998 – Sep 1999);  
Office of Naval Research (\$136,372).

Mediterranean Surface Circulation Studies (Oct 1999 – Sep 2000);  
Office of Naval Research (\$95,616).

Mediterranean Drifter Data Analyses (Oct 2000 – Sep 2002);  
Office of Naval Research (\$205,708).

Adriatic Mesoscale Experiment (AMEX) (Oct 2002 – Sep 2004);  
Office of Naval Research (\$349,835).

Dynamics of Localized Currents and Eddy Variability in the Adriatic (Oct 2002 – Sep 2004); Office of Naval  
Research (\$199,940).

Mediterranean Forecasting System – Towards Environmental Prediction (Mar 2003 – Feb 2006); EU 5<sup>th</sup>  
Framework Programme (€483,105).

Circulation in the Southeastern Mediterranean Sea (Feb 2005 – Apr 2007); Office of Naval Research  
(\$239,444).

EuroArgo Preparatory Phase (Jan 2008 – Jun 2011): EU 7<sup>th</sup> Framework Programme (€300,000).

Near-Surface Dispersion and Circulation in the Marmara Sea (Jun 2008 – Dec 2009); Office of Naval Research (\$176,111).

Surface Circulation in the Northeastern Mediterranean (Jun 2008 – May 2010); Office of Naval Research (\$154,445).

Coastal Ocean Circulation Experiment off Senegal (Jul 2008 – Jun 2010); Office of Naval Research (\$308,278).

GOCE Italy (ESA Endorsement: GOCE) (Jul 2009 – Jun 2012); Italian Space Agency (€155,435)

MyOcean (Jan 2009 – Mar 2012): EU 7<sup>th</sup> Framework Programme (€100,000).

Tracking Oil Spills and Coastal Awareness Network (Sep 2010 – Aug 2013): MED Objective 2-3, EU (€185,000).

Argo-Italy (Apr – Dec 2011): Italian Ministry of Instruction, University and Research (€1,000,000).

Coastal Ocean Circulation Experiment off Senegal II (May 2011 – Dec 2013); Office of Naval Research (\$317,640).

Strengthening International Dimension of Euro-Argo Research (Dec 2011 - Nov 2013); EU 7<sup>th</sup> Framework Programme (€72,900).

Policy-oriented Marine Environmental Research in the Southern European Seas (Jan 2012 - Dec 2015); ); EU 7<sup>th</sup> Framework Programme (€166,000).

Argo-Italy II (Jan 2012 – Dec 2012): Italian Ministry of Instruction, University and Research (€1,000,000).

MyOcean2 (Mar 2012 – Sep 2014): EU 7<sup>th</sup> Framework Programme (€80,000).

Argo-Italy III (Jan 2013 – Dec 2013): Italian Ministry of Instruction, University and Research (€500,000).

Euro-Argo Improvements for the GMES Marine Service (Jan 2013 - Dec 2015); EU 7<sup>th</sup> Framework Programme (€129,625).

Argo-Italy IV (Jan 2014 – Dec 2014): Italian Ministry of Instruction, University and Research (€1,000,000).

### ***External Professional Activities***

Chairman of the Management Board of the Euro-Argo ERIC, 2014-present

Member of the American Geophysical Union, the American Meteorological Society and the Oceanography Society.

Associate Editor, *Bollettino di Geofisica Teorica ed Applicata*, 1997-present.

Member, Scientific Committee of the “Gruppo Nazionale di Oceanografia Operativa”, 2004-2014.

Workshop on the “Adriatic Sea Oceanography”, 21-25 September 1998, International Centre for Theoretical Physics, Trieste, Italy, Chairman of Board of Directors.

31<sup>st</sup> International Liege Colloquium on Ocean Hydrodynamics “Three-Dimensional Ocean Circulation: Lagrangian measurements and diagnostic analyses”, 3-7 May 1999, University of Liege, Liege, Leading member of the Scientific Organizing Committee.

Guest Editor of the *Journal of Marine systems* (Special issue following the 31<sup>st</sup> International Liege Colloquium).

AGU Ocean Sciences Meeting, 26-30 Jan 2004, Portland, Oregon. Co-chairman of Session OS44 “The Mediterranean Sea: Forcings and Dynamics”.

Guest Editor of the Journal of Geophysical Research – Oceans (Special issue on the oceanography and marine meteorology of the Adriatic Sea published in 2007).

Advanced School on Oceanography “World Climate and Overturning Circulation in Oceans and Mediterranean Seas”, 30 April – 11 May 2007, International Centre for Theoretical Physics, Trieste, Italy, Co-Director.

42<sup>nd</sup> International Liege Colloquium on Ocean Hydrodynamics “Multiparametric observation and analysis of the sea”, 26-30 April 2010, University of Liege, Liege, Leading member of the Scientific Organizing Committee.

Guest Editor of Ocean Dynamics (Special issue following the 42<sup>nd</sup> International Liege Colloquium).

Reviewed numerous scientific manuscripts for publication in the following journals: Geophysical Research Letters, Continental Shelf Research, Journal for Marine Systems, Journal of Geophysical Research, Journal of Physical Oceanography, Dynamics of Atmospheres and Oceans, CIESM Proceedings, Scientia Marina Annales Geophysicae and Bollettino di Geofisica Teorica ed Applicata.

### ***Sea-going Activities***

Participated at the following oceanographic cruises:

1-11 July 1985: FRONTS, California Current System (Northeastern Pacific), R/V New Horizon.

14-24 May 1987: SQ87, California Current System (Northeastern Pacific). R/V New Horizon.

13-29 October 1992: GIN92, Nordic Seas, NRV Alliance, Scientist-in-charge.

24-28 May 1993: Ligurian Sea, NRV Alliance.

11-26 August 1993: GIN93, Nordic Seas, NRV Alliance, Scientist-in-charge.

25 November - 1 December 1994: ELNA7MC, Adriatic Sea, NRV Alliance, Scientist-in-charge.

1 - 6 December 1994: OGEX-0, Adriatic and Ionian Seas, NRV Alliance, Scientist-in-charge.

12-24 May 1995: OGEX-1, Adriatic and Ionian Seas, NRV Alliance, Scientist-in-charge.

24-30 August 1995: OGEX-2, Adriatic and Ionian Seas, NRV Alliance, Scientist-in-charge.

31 January - 24 February 2003: DOLCEVITA-1, Adriatic Sea, R/V Knorr.

26 May - 15 June 2003: DOLCEVITA-2, Adriatic Sea, R/V Knorr.

7-8 December 2009: EUROARGO, Black Sea, R/V Akademik.

24 June – 2 August 2012: TOSCA2012, Sicily Channel & Tyrrhenian Sea, R/V Urania

### ***Research Interests***

Ocean circulation, mesoscale eddies, circulation and water mass properties in semi-enclosed seas; strait and coastal dynamics; Remote sensing (coastal radars and satellites) and autonomous measurement techniques (drifters, floats, gliders).

### ***Refereed Journal Papers***

- (1) Niiler, P. P., P.-M. Poulain and L. R. Haury (1989) Synoptic three-dimensional circulation in an onshore-flowing filament of the California Current, *Deep-Sea Research*, 36(3), 385-405.
- (2) Chereskin T. K., P. P. Niiler and P.-M. Poulain (1989) A numerical study of the effect of upper ocean shear on flexible drogued drifters, *Journal of Atmospheric and Oceanic Technology*, 6(2), 243-253.
- (3) Poulain, P.-M. and P. P. Niiler (1989) Statistical analysis of the surface circulation in the California Current System using satellite-tracked drifters, *Journal of Physical Oceanography*, 19, 1588-1603.
- (4) Poulain, P.-M. and P. P. Niiler (1990) Comment on "The response of drifting buoys to currents and wind" by W. Krauss et al., *Journal of Research*, 95(C1), 797-799.
- (5) Poulain, P.-M. (1990) Near-inertial and diurnal motions in the trajectories of mixed layer drifters, *Journal of Marine Research*, 48, 793-823.
- (6) Poulain, P.-M., D. S. Luther and W. C. Patzert (1993) Deriving inertial wave characteristics from surface drifter velocities: Frequency variability in the tropical Pacific, *Journal of Geophysical Research*, 97(C11), 17947-17959.
- (7) Poulain, P.-M. (1993) Estimates of horizontal divergence and vertical velocity in the equatorial Pacific, *Journal of Physical Oceanography*, 23, 601-607.
- (8) Miller, A. J., H. G. Arango, A. R. Robinson, W. G. Leslie, P.-M. Poulain and A. Warn-Varnas (1995) Quasigeostrophic forecasting and physical processes of Iceland-Faroe frontal variability, *Journal of Physical Oceanography*, 25, 1273-1295.
- (9) Miller, A. J., P.-M. Poulain, A. R. Robinson, H. G. Arango, W. G. Leslie and A. Warn-Varnas (1995) Quantitative skill of quasigeostrophic forecasts of a baroclinically unstable Iceland-Faroe Front, *Journal of Geophysical Research*, 100(C6), 10833-10849.
- (10) Niiler, P. P., A. S. Sybrandy, K. Bi, P.-M. Poulain and D. S. Bitterman (1995) Measurements of the water following capability of holey- and tristar drifters, *Deep-Sea Research*, 42(11-12), 1951-1964.
- (11) Poulain, P.-M., A. Warn-Varnas and P. P. Niiler (1996) Near-surface circulation of the Iceland-Norwegian seas as measured by Lagrangian drifters, *Journal of Geophysical Research*, 101(C8), 18237-18258.
- (12) Robinson, A. R., H. G. Arango, A. J. Miller, A. Warn-Varnas, P.-M. Poulain and W. G. Leslie (1996) Real time operational forecasting on of the Iceland-Faeroe frontal variability, *Bulletin of the American Meteorological Society*, 77(2), 243-259.
- (13) Hansen, D. V. and P.-M. Poulain (1996) Processing of WOCE/TOGA drifter data, *Journal of Atmospheric and Oceanic Technology*, 13, 900-909.
- (14) Gacic, M., V. Kovacevic, B. Manca, E. Papageorgiou, P.-M. Poulain, P. Scarazzato and A. Vetrano (1996) Thermohaline properties and circulation in the Otranto Strait, *Bulletin de l'Institut oceanographique, Monaco, CIESM Sciences Series 2, special volume 17*, 117-145.
- (15) Miller, A. J., P. Lermusiaux and P.-M. Poulain (1996) A topographic-Rossby mode resonance over the Iceland-Faroe Ridge, *Journal of Physical Oceanography*, 26, 2735-2747.
- (16) Poulain, P.-M., Gacic, M. and A. Vetrano (1996) Current measurements in the Strait of Otranto reveal unforeseen aspects of its hydrodynamics, *EOS*, 77(36), 345-348.
- (17) Perkins, H., T. S. Hopkins, S.-A. Malmberg, P.-M. Poulain and A. Warn-Varnas (1998) Oceanographic conditions east of Iceland, *Journal of Geophysical Research*, 103 (C10), 21531-21542.
- (18) Kovacevic, V., M. Gacic and P.-M. Poulain (1998) "Subtidal water flow across the Strait of Otranto during winter, summer and autumn periods", *Rapports de la Commission Internationale de la Mer Méditerranée*, 35, 156-157.

- (19) Poulain, P.-M. (1998) "Lagrangian measurements of surface circulation in the Adriatic and Ionian Seas between November 1994 and March 1997", *Rapports de la Commission Internationale de la Mer Méditerranée*, 35, 190-191.
- (20) Poulain, P.-M. (1999) Drifter observations of surface circulation in the Adriatic Sea between December 1994 and March 1996, *Journal of Marine Systems*, 20, 231-253.
- (21) Kovacevic, V., M. Gacic and P.-M. Poulain (1999) Eulerian current measurements in the Strait of Otranto and in the Southern Adriatic, *Journal of Marine Systems*, 20, 255-278.
- (22) Poulain, P.-M. and P. Zanasca (1999) Lagrangian measurements of surface currents in the northern and middle Adriatic Sea, *The Adriatic Sea*, T. S. Hopkins et al., eds., *Ecosystem Research Report No. 32*, EUR18834, European Commission, Brussels, 107-115.
- (23) Falco, P., A. Griffa, P.-M. Poulain and E. Zambianchi (2000) Transport properties in the Adriatic Sea as deduced from drifter data, *Journal of Physical Oceanography*, 30, 2055-2071.
- (24) Castellari, S., A. Griffa, T. Ozgokmen and P.-M. Poulain (2001) Prediction of particle trajectories in the Adriatic Sea using Lagrangian data assimilation, *Journal of Marine Systems*, 29, 33-50.
- (25) Poulain, P.-M. (2001) Adriatic Sea Surface Circulation as derived from drifter data between 1990 and 1999, *Journal of Marine Systems*, 29, 3-32.
- (26) Mauri, E. and P.-M. Poulain (2001) Northern Adriatic Sea surface circulation and temperature/pigment fields in September and October 1997, *Journal of Marine Systems*, 29, 51-67.
- (27) Afanasyev, Y. D.; Kostianoy, A. G.; Zatsepin, A. G. and P.-M. Poulain (2002) Analysis of velocity field in the eastern Black Sea from satellite data during the Black Sea '99 experiment, *Journal of Geophysical Research*, 107 (C8), 13-1 - 13-8.
- (28) McClean, J. L., P.-M. Poulain, J. W. Pelton and M. Maltrud (2002) Eulerian and Lagrangian statistics from surface drifters and a high-resolution POP simulation in the North Atlantic. *Journal of Physical Oceanography*, 32, 2472-2491.
- (29) Zatsepin, A. G., A. I. Ginzburg, A. G. Kostianoy, V. V. Kremenetskiy, V. G. Krivosheya, S. V. Stanichny and P.-M. Poulain (2003) Observations of Black Sea mesoscale eddies and associated horizontal mixing, *Journal of Geophysical Research*, 108 (C8), 3246, doi:10.1029/2002JC001390.
- (30) Poulain, P.-M., E. Mauri and P. Zanasca (2003) Upper thermal structure and intermediate currents in the Adriatic and northern Ionian as measured by a Lagrangian profiler in 1995 and 1996. *Bolletino di Geofisica Teorica ed Applicata*, 44(2), 139-154.
- (31) Maurizi, A., A. Griffa, P.-M. Poulain and F. Tampieri (2004) Lagrangian turbulence in the Adriatic Sea as computed from drifter data: Effects of inhomogeneity and nonstationarity, *Journal of Geophysical Research*, 109, C04010, doi:10.1029/2003JC002119.
- (32) Poulain, P.-M., E. Mauri and L. Ursella (2004) Unusual upwelling event and current reversal off the Italian Adriatic coast in summer 2003. *Geophysical Research Letters*, 31, L05303, doi:10.1029/2003GL019121
- (33) Sherwood, C. R., Book, J. W., Carniel, S., Cavaleri, L., Chiggiato, J., Das, H., Doyle, J. D., Harris, C. K., Niedoroda, A. W., Perkins, H., Poulain, P.-M., Pullen, J., Reed, C. W., Russo, A., Sclavo, M., Signell, R. P., Traykovski, P. and J. C. Warner (2004) Sediment dynamics in the Adriatic Sea investigated with coupled models. *Oceanography*, 17(4), 58-69.
- (34) Zhurbas, V. M., A. G. Zatsepin, Yu. V. Grigor'eva, V. N. Ereemeev, V. V. Kremenetskiy, S. V. Motyzhev, S. G. Poyarkov, P.-M. Poulain, S. V. Stanichny and D. M. Soloviev (2004) Water circulation and characteristics of currents of different scales in the upper layer of the Black Sea from drifter data, *Oceanology*, 44(1), 30-43.
- (35) Lee, C. M., F. Askari, J. Book, S. Carniel, B. Cushman-Roisin, C. Dorman, J. Doyle, P. Flament, C. K. Harris, B. H. Jones, M. Kuzmic, P. Martin, A. Ogston, M. Orlic, H. Perkins, P.-M. Poulain, J. Pullen, A.

Russo, C. Sherwood, R. Signell, and D. Thaler Detweiler (2005) Northern Adriatic response to a Wintertime Bora Wind Event, *EOS*, vol.86, n° 16, 157, 163, 165

(36) Poulain, P.-M., R. Barbanti, S. Motyzhev and A. Zatsepin (2005) Statistical description of the Black Sea near-surface circulation using drifters in 1999-2003. *Deep-Sea Research I*, 52, 2250-2274.

(37) Notarstefano G., E. Mauri and P.-M. Poulain (2006) Near-surface thermal structure and surface diurnal warming in the Adriatic sea using satellite and drifter data. *Remote Sensing of environment*, 101, 194-211.

(38) Taillandier V., A. Griffa, P.-M. Poulain and K. Beranger (2006) Assimilation of Argo float positions in the western Mediterranean Sea and impact on ocean circulation simulations, *Geophysical Research Letters*, 33, L11604, doi: 10.1029/2005GL025552.

(39) Emelianov, M., J. Font, A. Turiel, C. Millot, J. Solé, P.-M. Poulain, A. Julià and M.-R. Vtrià (2006) Transformation of Levantine Intermediate Water tracked by MEDARGO floats in the Western Mediterranean. *Ocean Science*, 2, 281-290.

(40) Ursella, L., P. M. Poulain, and R. P. Signell (2006) Surface drifter derived circulation in the northern and middle Adriatic Sea: Response to wind regime and season, *Journal of Geophysical Research*, 111112 (C3), C03S04, doi:10.1029/2005JC003177.

(41) Mauri, E., P.-M. Poulain, and Z. Juznic-Zonta (2007) MODIS chlorophyll variability in the northern Adriatic Sea and relationship with forcing parameters. *Journal of Geophysical Research*, 112, C03S11, doi:10.1029/2006JC003545.

(42) Rio, M.-H., P.-M. Poulain, A. Pascual, E. Mauri, G. Larnicol and R. Santoleri (2007) A Mean Dynamic Topography of the Mediterranean Sea computed from altimetric data, in-situ measurements and a general circulation model. *Journal of Marine Systems*, 65, 484-508.

(43) Veneziani M., A. Griffa, P.-M. Poulain (2007) Historical drifter data and statistical prediction of particle motion: A case study in the central Adriatic Sea. *Journal of Atmospheric and Oceanic Technology*, 24, 235-254.

(44) Chavanne, C., I. Janekovic, P. Flament, P. Poulain, M. Kuzmic, and K. Gurgel (2007) Tidal currents in the northwestern Adriatic: High-frequency radio observations and numerical model predictions, *Journal of Geophysical Research*, 112, C03S21, doi:10.1029/2006JC003523

(45) Poulain, P.-M. and E. Zambianchi (2007) Surface circulation in the central Mediterranean Sea as deduced from Lagrangian drifters in the 1990s. *Continental Shelf Research*, 27 (7), 981-1001.

(46) Haza A. C., Griffa A., Martin P., Molcard A., Ozgokmen T. M., Poje A. C., Barbanti R., Book J. W., Poulain P. M., Rixen M. and Zanasca P. (2007) Model-based directed drifter launches in the Adriatic Sea: Results from the DART experiment. *Geophysical Research Letters*, 34, L10605, doi:10.1029/2007GL029634

(47) Poulain, P.-M., R. Barbanti, J. Font, A. Cruzado, C. Millot, I. Gertman, A. Griffa, A. Molcard, V. Rupolo, S. Le Bras, and L. Petit de la Villeon (2007) MedArgo: a drifting profiler program in the Mediterranean Sea. *Ocean Science*, 3, 379-395.

(48) Lee, C., M. Orlic, P.-M. Poulain and B. Cushman-Roisin (2007) Introduction to special section: Recent advances in oceanography and marine meteorology of the Adriatic Sea. *Journal of Geophysical Research*, 112, C03201, doi: 10.1029/2007JC004115.

(49) Notarstefano G., Poulain P.-M. and Mauri E. (2008) Estimation of Surface Currents in the Adriatic Sea from Sequential Infrared Satellite Images. *Journal of Atmospheric and Oceanic*, 25, 271-285.

(50) Mauri, E., P.-M. Poulain, and G. Notarstefano (2008) Spatial and temporal variability of the sea surface temperature in the Gulf of Trieste between January 2000 and December 2006, *Journal of Geophysical Research*, 113, C10012, doi:10.1029/2007JC004537.

(51) Taillandier, V., A. Griffa, P. M. Poulain, R. Signell, J. Chiggiato, and S. Carniel (2008) Variational analysis of drifter positions and model outputs for the reconstruction of surface currents in the central Adriatic during fall 2002, *Journal of Geophysical Research*, 113, C04004, doi:10.1029/2007JC004148.



- (52) Beg Paklar, G., N. Zagar, M. Zagar, R. Vellore, D. Koracin, P.-M. Poulain, M. Orlic, I. Vilibic, and V. Dadic (2008) Modeling the trajectories of satellite-tracked drifters in the Adriatic Sea during a summertime bora event, *Journal of Geophysical Research*, 113, C11S04, doi:10.1029/2007JC004536.
- (53) Gerin R., Poulain P.-M., Taupier-Letage I., Millot C., Ben Ismail S., Sammari C. (2009) Surface circulation in the Eastern Mediterranean using Lagrangian drifters (2005-2007). *Ocean Science*, 5, 559–574.
- (54) Molcard, A., Poulain, P.-M., Forget, P., Griffa, A., Barbin, Y., Gaggelli, J., De Maistre, J.C., and Rixen, M., (2009). Comparison between VHF radar observations and data from drifter clusters in the Gulf of La Spezia (Mediterranean Sea). *Journal of Marine Systems*, 78 (Supplement 1), S79-S89.
- (55) Poulain, P.M., R. Gerin, E. Mauri, and R. Pennel (2009) Wind Effects on Drogued and Undrogued Drifters in the Eastern Mediterranean. *Journal of Atmospheric and Oceanic Technology*, 26, 1144-1156.
- (56) Salon, S., P.M. Poulain, E. Mauri, R. Gerin, D. Adami and F. Davoli (2009) Remote oceanographic instrumentation integrated in a GRID environment. *Computational Methods in Science and Technology* 15(1), 49-55.
- (57) Vandenbulcke, L., J.-M. Beckers, F. Lenartz, A. Barth, P.-M. Poulain, M. Aidonidis, J. Meyrat, F. Arduin, M. Tonani, C. Fratianni, L. Torrisi, D. Pallela, J. Chiggiato, M. Tudor, J.W. Book, P. Martin, G. Peggion and M. Rixen (2009) Super-ensemble techniques: Application to surface drift prediction. *Progress In Oceanography*, 82 (3), 149-167.
- (58) Bolzon, G., K. Bylec, A. Cheptsov, A. Del Linz, Mauri E., Poulain P.-M., M. Prica, and S. Salon (2010) Preliminary deployment of Grid-assisted oceanographic applications. *Advances in Geosciences*, 28, 39–45.
- (59) Menna, M. and P. M. Poulain (2010) Mediterranean intermediate circulation estimated from Argo data. *Ocean Science*, 6, 331–343.
- (60) Rinaldi, E., B. Buongiorno Nardelli, E. Zambianchi, R. Santoleri, and P.-M. Poulain (2010) Lagrangian and Eulerian observations of the surface circulation in the Tyrrhenian Sea, *Journal of Geophysical Research*, 115, C04024, doi:10.1029/2009JC005535
- (61) Haza, A., T. Ozgokmen, A. Griffa, A. Molcard, P.-M. Poulain and G. Peggion (2010) Transport properties in small-scale coastal flows: relative dispersion from VHF radar measurements in the Gulf of La Spezia. *Ocean Dynamics*, 60, 861-882.
- (62) Poulain, P.-M., Lee, C., Mauri, E., Notarstefano, G. and Ursella, L. (2011) Observations of currents and temperature-salinity-pigment fields in the northern Adriatic Sea in winter 2003. *Bollettino di Geofisica Teorica e Applicata*, 52(1), 149-174.
- (63) Nilsson J. A. U. , Dobricic S., Pinardi N., Taillandier V., Poulain P.-M. (2011) On the assessment of Argo float trajectory assimilation in the Mediterranean Forecasting System. *Ocean Dynamics*, doi: 10.1007/s10236-011-0437-0.
- (64) Schroeder, K., A.C. Haza, A. Griffa, T.M. Ozgokmen, P.M. Poulain, R. Gerin, G. Peggion and M. Rixen (2011) Relative dispersion in the Liguro-Provencal basin: from sub-mesoscale to mesoscale, *Deep Sea Research I*, 58, 209–228.
- (65) Gacic M., Civitarese G., Eusebi Borzelli G. L., Kovacevic V., Poulain P.-M. , Theocharis A., Menna M., Catucci A. and Zarokanellos N. (2011) On the relationship between the decadal oscillations of the northern Ionian Sea and the salinity distributions in the eastern Mediterranean. *Journal of Geophysical Research*, 116, C12002, doi:10.1029/2011JC007280.
- (66) Tomazic I., Kuzmic M., Notarstefano G., Mauri E. and Poulain P.-M. (2011) A comparative assessment of satellite-derived Adriatic Sea surface temperature. *International Journal of Remote Sensing*, 32(17), 4871-4892.

- (67) Alvera-Azcarate, A. and P.-M. Poulain (2011) Multiparametric observation and analysis of the sea. *Ocean Dynamics*, 61, 1491-1493. doi: 10.1007/s10236-011-0492-6.
- (68) Nilsson J. A. U., Dobricic S., Pinardi N., Poulain P.-M., and Pettenuzzo D. (2012) Variational assimilation of Lagrangian trajectories in the Mediterranean ocean Forecasting System. *Ocean Science*, 8, 249-259, doi:10.5194/os-8-249-2012.
- (69) Poulain, P.-M., M. Menna and E. Mauri (2012) Surface geostrophic circulation of the Mediterranean Sea derived from drifter and satellite altimeter data. *Journal of Physical Oceanography*, 42, 973–990.
- (70) Menna, M., P.-M. Poulain, G. Zodiatis and I. Gertman (2012) On the surface circulation of the Levantine sub-basin derived from Lagrangian drifters and satellite altimetry data. *Deep-Sea Research I*, 65, 46-58. doi: 10.1016/j.dsr.2012.02.008.
- (71) Chiggiato J., Jarosz E., Book J.W., Dykes J., Torrisi L., Poulain P.-M., Gerin R., Horstmann J. and Besiktepe S. (2012) Dynamics of the circulation in the Sea of Marmara: numerical modeling experiments and observations from the Turkish straits system experiment. *Ocean Dynamics*, doi: 10.1007/s10236-011-0485-5.
- (72) Poulain P.-M., Gerin R., Rixen M., Zanasca P., Teixeira J., Griffa A., Molcard A., de Marte M. and Pinardi N. (2012) Aspects of the surface circulation in the Liguro-Provençal basin and Gulf of Lion as observed by satellite-tracked drifters (2007-2009) *Bollettino di Geofisica Teorica ed Applicata*, 53(2), 261-279, doi:10.4430/bgta0052.
- (73) De Dominicis M., Leuzzi G., Monti P., Pinardi N. and Poulain P.-M. (2012) Eddy diffusivity derived from drifter data for dispersion model applications. *Ocean Dynamics* 62(9) 1381-1398, doi: 10.1007/s10236-012-0564-2.
- (74) Schroeder, K., Chiggiato, J., A.C. Haza, A. Griffa, T.M. Ozgokmen, P. Zanasca, A. Molcard, M. Borghini, P.-M. Poulain, R. Gerin, E. Zambianchi, P. Falco and C. Trees (2012), Targeted Lagrangian sampling of submesoscale dispersion at a coastal frontal zone, *Geophysical Research Letters*, 39, L11608, doi:10.1029/2012GL051879.
- (75) Alpers W., Brandt P., Lazar A., Dagher D., Sow B., Faye S., Hansen M. W., Rubino A., Poulain P.-M. and Brehmer P. (2013) A small-scale oceanic eddy off the coast of West Africa studied by multi-sensor satellite and surface drifter data. *Remote Sensing of Environment*, 129, 132-143. DOI 10.1016/j.rse.2012.10.032
- (76) Griffa A., Haza A., Ozgokmen T., Molcard A., Taillandier V., Schroeder K., Chang Y. and Poulain P.-M. (2013) Investigating transport pathways in the ocean. *Deep-Sea Research II* 85, 81-95.
- (77) Gerin, R., Poulain, P.-M., Besiktepe, S. and Zanasca, P. (2013) Surface circulation of the Marmara Sea as deduced from drifters, *Turkish Journal of Earth Sciences*, 22(6), 919-930.
- (78) Poulain, P.-M. (2013) Tidal currents in the Adriatic as measured by surface drifters. *Journal of Geophysical Research, Oceans*, 118, 1434-1444, doi:10.1002/jgrc.20147.
- (79) Escudier, R., J. Bouffard, A. Pascual, P.-M. Poulain and M.-I. Pujol (2013) Improvement of coastal mesoscale observation from space : application to the North Western Mediterranean Sea. *Geophysical Research Letters*, 40, 2148-2153, doi:10.1002/grl.50324.
- (80) Poulain P.-M. and Hariri S. (2013) Transit and residence times in the Adriatic Sea surface as derived from drifter data and Lagrangian numerical simulations *Ocean Science*, 9, 713-720, doi:10.5194/os-9-713-2013.

(81) Poulain P.-M., Bussani A., Gerin R., Jungwirth R., Mauri E., Menna M., and Notarstefano G. (2013) Mediterranean surface currents measured with drifters: From basin to subinertial scales. *Oceanography* 26(1), 38-47.

(82) Menna M., Poulain P.-M., Mauri E., Sampietro D., Panzetta F., Reguzzoni M. and Sansò F. (2013) Mean surface geostrophic circulation of the Mediterranean Sea estimated from GOCE geoid models and altimetric mean sea surface: initial validation and accuracy assessment *Bollettino di Geofisica Teorica ed Applicata*, 54(4), 347-365; doi: 10.4430/bgta0104.

(83) Bensi M., Cardin V., Rubino A., Notarstefano G., and Poulain P.-M. (2013). Effects of winter convection on the deep layer of the Southern Adriatic Sea in 2012. *Journal of Geophysical Research: Oceans*, Vol. 118, 1-12, doi:10.1002/2013JC009432.

(84) Gerin, R., Kourafalou, V., Poulain, P.-M. and Besiktepe, S. (2014) Influence of Dardanelles outflow induced thermal fronts and winds on drifter trajectories in the Aegean Sea. *Mediterranean Marine Science*, 15(2), 919-930, doi: <http://dx.doi.org/10.12681/mms.464>

(85) Menna M. and Poulain P.-M. (2014). Geostrophic currents and kinetic energies in the Black Sea estimated from merged drifter and satellite altimetry data. *Ocean Science*, 10, 155-165, doi:10.5194/os-10-155-2014.

(86) Bouffard, J., F. Nencioli, R. Escudier, A. Michelangelo Doglioli, A. Petrenko, A. Pascual and P.-M. Poulain (2014). Lagrangian analysis of satellite-derived currents: Application to the North Western Mediterranean coastal dynamics. *Advance in Space Research*, 53(5), 788–801.

(87) Gacic M., Civitarese G., Kovacevic V., Ursella L., Bensi M., Menna M., Cardin V., Poulain P.-M., S. Cosoli, G. Notarstefano, and Pizzi C. (2014) Extreme winter 2012 in the Adriatic: an example of climatic effect on the BiOS rhythm, doi:10.5194/osd-11-425-2014.

(88) Malanote-Rizzoli, P. et al. (2014) Physical forcing and physical/biochemical variability of the Mediterranean Sea : A review of unresolved issues and directions for future research *Ocean Sci.*, 10, 281-322, 2014 doi:10.5194/os-10-281-2014.

(89) Rio M.-H., Pascual A., Poulain P.-M., Menna M., Barcelò B. and Tintorè J. (2014) Computation of a new mean dynamic topography for the Mediterranean Sea from model outputs, altimeter measurements and oceanographic in situ data. *Ocean Sci.*, doi:10.5194/os-10-731-2014 14 pp.

(90) Kovačević, V., Ursella, L., Gačić, M., Notarstefano, G., Menna, M., Bensi, M. and Poulain, P.-M. (2015) on the Ionian thermohaline properties and circulation in 2010-2013 as measured by Argo floats. *Acta Adriatica*, 56 (1), 97-114.

(91)

### ***Book Chapters***

(1) Gacic, M., P.-M. Poulain, M. Zore-Armanda and V. Barale (2001) Chapter 1 : Overview. In “Physical oceanography of the Adriatic Sea – Past, present and future”, Cushman-Roisin et al., eds. Kluwer Academic Publishers, Dordrecht, The Netherlands, 1-44.

(2) Poulain, P.-M. and F. Raicich (2001) Chapter 2 : Forcings. In “Physical oceanography of the Adriatic Sea – Past, present and future”, Cushman-Roisin et al., eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 45-65.

(3) Poulain, P.-M. and B. Cushman-Roisin (2001) Chapter 3 : Circulation. In “Physical oceanography of the Adriatic Sea – Past, present and future”, Cushman-Roisin et al., eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 67-109.

(4) Poulain, P.-M., V. H. Kourafalou and B. Cushman-Roisin (2001) Chapter 5 : Northern Adriatic Sea. In "Physical oceanography of the Adriatic Sea – Past, present and future", Cushman-Roisin et al., eds., Kluwer Academic Publishers, Dordrecht, The Netherlands, 143-165.

(5) Cushman-Roisin, B., M. Gacic, P.-M. Poulain and A. Artegiani (2001) Chapter 8 : Toward the future. In "Physical oceanography of the Adriatic Sea – Past, present and future", Cushman-Roisin et al., eds., Kluwer Academic Publishers, 241-245.