

Curriculum Vitae

Pierre-Marie R. G. Poulain

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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.

Chronology of Professional History

Principal Scientist in EKOE Group, NATO STO Centre for Maritime Research and Experimentation, La Spezia, Italy, 2018-present.

Research Director in Department of Oceanography, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste, Italy, 2017-present.

Senior Scientist in Department of Oceanography, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste, Italy, 2000-2017.

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.

Teaching Activities (1996-present)

Courses taught at the Naval Postgraduate School, Monterey, California

Remote Sensing of the Atmosphere and Ocean (1996- 1999). Sound in the Ocean (1997-1998). Air/ocean Remote Sensing for USW Curriculum (1997). Air/ocean Remote Sensing for Multidisciplinary Curricula (1996-2000). Descriptive Physical Oceanography (1999-2000).

Lectures given at Italian Universities

Course “*Physics of the Oceans*” of Diploma Programme, Abdus Salam International Centre for Theoretical Physics, Trieste, 2008-2018.

Course “*Physical Oceanography*” of School of Doctorate - Environmental and Industrial Fluid Mechanics, University of Trieste, 2006-2018.

Seminars in Oceanography for the “*Corso di Master in Science 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’*a* Foscari, Venice, Academic year 2001-2002.

Recent Research Grants (2015-current)

Argo-Italy V (Jan 2015 – Dec 2015): Italian Ministry of Instruction, University and Research (€852,489).

Circulation and water mass properties in the Northeastern Levantine (May 2015 – Dec 2017): Office of Naval Research (\$270,000).

Monitoring the Oceans and Climate Change with Argo (Jun 2015 - May 2020): EU EASME (DG MARE) (€160,651).

Argo-Italy VI (Jan 2016 – Dec 2016): Italian Ministry of Instruction, University and Research (€950,000).

Argo-Italy VII (Jan 2017 – Dec 2017): Italian Ministry of Instruction, University and Research (€950,000).

Monitoring of the Eastern Levantine with Mobile Autonomous Systems (Oct 2017 – Sep 2019): Italian Ministry of Foreign Affairs (€100,000).

Argo-Italy VIII (Jan 2018 – Dec 2018): Italian Ministry of Instruction, University and Research (€950,000).

Argo-Italy IX (Jan 2019 – Dec 2019): Italian Ministry of Instruction, University and Research (€1.000,000).

Lagrangian Measurements in the Eastern Alboran Sea (Apr 2018 – Mar 2021): Office of Naval Research (\$159,069).

Internal tides and frontal subduction (Aug 2020 – Jul 2022): Office of Naval Research (\$235,137).

Ambient noise characterization using Lagrangian platforms (Sep 2021 – Aug 2024): Office of Naval Research (\$545,925).

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).

Recent refereed Journal Papers (2022-present).

Martellucci, R., M. Menna, E. Mauri, A. Pirro, R. Gerin, F. Paladini de Mendoza, R. Garić, M. Batistić, V. di Biagio, P. Giordano, L. Langone, S. Miserocchi, A. Gallo, G. Notarstefano, G. Savonitto, A. Bussani, M. Pacciaroni, P. Zuppelli, P.-M. Poulain. Recent changes of the dissolved oxygen distribution in the deep convection cell of the southern Adriatic Sea (2024) *Journal of Marine Systems*, 245, art. no. 103988

Menna M., Martellucci R., Reale M., Cossarini G., Salon S., Notarstefano G., Mauri E., Poulain P.-M., Gallo A., Solidoro C. A case study of impacts of an extreme weather system on the Mediterranean Sea circulation features: Medicane Apollo (2021) (2023) *Scientific Reports*, 13 (1), art. no. 3870

Poulain P.-M., Centurioni L., Brandini C., Taddei S., Berta M., Menna M. Relative dispersion and kinematic properties of the coastal submesoscale circulation in the southeastern Ligurian Sea (2023) *Ocean Science*, 19 (6), pp. 1617 - 1631
Poulain P.-M., Menna M., Mauri E., Pirro A., Hayes D.R., Gildor H. Drifter observations of surface currents in the Cyprus Gyre (2023) *Frontiers in Marine Science*, 10, art. no. 1266040

Ballard M.S., Sagers J.D., Poulain P.-M., Mackinnon J., Lucas A.J., Sanchez-Rios A. Out-of-plane arrivals recorded by drifting hydrophones during the Northern Ocean Rapid Surface Evolution Experiment (2023) *Journal of the Acoustical Society of America*, 154 (5), pp. 2757 – 2768

Esposito G., Donnet S., Berta M., Shcherbina A.Y., Freilich M., Centurioni L., D'Asaro E.A., Farrar J.T., Johnston T.M.S., Mahadevan A., Özgökmen T., Pascual A., Poulain P.-M., Ruiz S., Tarry D.R., Griffa A. Inertial Oscillations and Frontal Processes in an Alboran Sea Jet: Effects on Divergence and Vertical Transport (2023) *Journal of Geophysical Research: Oceans*, 128 (3), art. no. e2022JC019004

Kubin E., Menna M., Mauri E., Notarstefano G., Mieruch S., Poulain P.-M. Heat content and temperature trends in the Mediterranean Sea as derived from Argo float data (2023) *Frontiers in Marine Science*, 10, art. no. 1271638

Oddo P., Poulain P.M., Falchetti S., Storto A., Zappa G. Internal tides in the central Mediterranean Sea: observational evidence and numerical studies (2023) *Ocean Dynamics*, 73 (3-4), pp. 145 – 163

Poulain, P.-M., Oddo, P., Pennucci, G., Lewis, C., Sliwka, J., Duda, T. F., Drago, A. Observations of internal tidal dynamics Southwest of Malta in the central Mediterranean Sea (2023) *Continental Shelf Research*, Volume 254, 104922.

Cutolo, E., Pascual, A., Ruiz, S., Shaun Johnston, T.M., Freilich, M., Mahadevan, A., Shcherbina, A., Poulain, P.-M., Özgökmen, T., Centurioni, L.R., Rudnick, D.L., D'Asaro, E. Diagnosing Frontal Dynamics From Observations Using a Variational Approach (2022) *Journal of Geophysical Research: Oceans*, 127 (11), art. no. e2021JC018336

Tarry, D.R., Ruiz, S., Johnston, T.M.S., Poulain, P.-M., Özgökmen, T., Centurioni, L.R., Berta, M., Esposito, G., Farrar, J.T., Mahadevan, A., Pascual, A. Drifter Observations Reveal Intense Vertical Velocity in a Surface Ocean Front (2022) *Geophysical Research Letters*, 49 (18), art. no. e2022GL098969

Pirro, A., Mauri, E., Gerin, R., Martellucci, R., Zuppelli, P., Poulain, P.M. New Insights on the Formation and Breaking Mechanism of Convective Cyclonic Cones in the South Adriatic Pit during Winter 2018 (2022) *Journal of Physical Oceanography*, 52 (9), pp. 2049-2068.

Taillandier, V., D'Ortenzio, F., Prieur, L., Conan, P., Coppola, L., Cornec, M., Dumas, F., Durrieu de Madron, X., Fach, B., Fourrier, M., Gentil, M., Hayes, D., Husrevoglu, S., Legoff, H., Le Ster, L., Örek, H., Ozer, T., Poulain, P.M., Pujo-Pay, M., Ribera d'Alcalà, M., Salihoglu, B., Testor, P., Velaoras, D., Wagener, T., Wimart-Rousseau, C. Sources of the Levantine Intermediate Water in Winter 2019 (2022) *Journal of Geophysical Research: Oceans*, 127 (6), art. no. e2021JC017506

Menna, M., Gačić, M., Martellucci, R., Notarstefano, G., Fedele, G., Mauri, E., Gerin, R., Poulain, P.-M. Climatic, Decadal, and Interannual Variability in the Upper Layer of the Mediterranean Sea Using Remotely Sensed and In-Situ Data (2022) *Remote Sensing*, 14 (6), art. no. 1322

Fedele, G., Mauri, E., Notarstefano, G., Poulain, P.M. Characterization of the Atlantic Water and Levantine Intermediate Water in the Mediterranean Sea using 20 years of Argo data (2022) Ocean Science, 18 (1), pp. 129-142.

Poulain, P.-M., Centurioni, L., Özgökmen, T.

Comparing the Currents Measured by CARTHE, CODE and SVP Drifters as a Function of Wind and Wave Conditions in the Southwestern Mediterranean Sea (2022) Sensors, 22 (1), art. no. 353

Scopus h-index (July2024): 48

Il sottoscritto autorizza il trattamento dei dati personali ai sensi ai sensi del Decreto Legislativo 196/2003, coordinato con il Decreto Legislativo 101/2018, e dell'art. 13 del GDPR (Regolamento UE 2016/679)".

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