

PERSONAL INFORMATION

Pierpaolo Falco


Born in Naples (ITALY) on July the 22nd 1969

CURRENT POSITION

Associate Professor in Oceanography and Atmospheric Physics

EDUCATION

- PhD in Marine Science and Engineering (University of Naples Federico II): Thesis title: "Lagrangian Correntometry in the Southern Ocean";
- Graduated in Nautical Disciplines at the Parthenope University of Naples (formerly Naval University Institute). Thesis in Physical Oceanography entitled: "Study of the dispersion of passive tracers in the Tyrrhenian Sea through the simulation of Lagrangian trajectories"

PROFESSIONAL TRAINING

- June 1996- July 2003: scholarship first and then research fellow at the Department of Sciences for the Environment, today Department of Sciences and Technologists, of the Parthenope University of Naples;
- August 2003- February 2005: researcher at the Institute of Marine Sciences - Ancona Fishing Section of the CNR;
- March 2005 - February 2006: research fellow at the Department of Marine Sciences, today Department of Life and Environmental Sciences, Polytechnic University of Marche, Ancona
- March 2006 - October 2006: project collaboration at the Institute of Marine Sciences - Ancona Fishing Section of the CNR.
- from November 2006 to 09/30/2017 in service as assistant professor at the Parthenope University of Naples, Department of Science and Technology (previously at the Department of Environmental Sciences)

Teaching activity carried out at the University of belonging

- from A.Y. 2007-2008 to A.Y. 2011-2012: Meteo-Oceanographic Measurements. 1st level degree course in Nautical and Aeronautical Sciences
- from AY 2010-2011 to 2011-2012i: 3-credits (over 6) module of the course of Analysis of hydrographic and oceanographic data - Master's Degree in Climate Sciences
- from A.A. 2012-2013: Coastal Oceanography and Measurements: 1st level degree course in Nautical and Aeronautical Sciences
- from A.Y. 2013-2014 to 2015-2016 3 credits over 6 of the courses of Climatology of the master's degree in Navigation Sciences and Technologies
- from A.Y. 2013-2014 to 2015-2016 3 credits over 9 of the course of Polar Oceanography of the three-year degree in Nautical and Aeronautical Sciences
- from the A.Y. 2016-2017 to date course of Polar Oceanography three-year degree in Nautical and Aeronautical Sciences
- A.Y. 2017-2018 6 out of 9 credits of the Meteorology course, three-year degree in Nautical and Aeronautical Sciences
- A.Y. 2017-2018 and 2018-2019 course in Climatic Risk (3 credits) PhD in Environmental Phenomena and Risks

Teaching activity carried out at other universities

- from A.Y. 2007-2008 to the A.Y. 2012-2013: Fundamentals of Climatology and Meteorology: First level degree course in Environmental Control and Civil Protection Techniques of the Faculty of Science of the Polytechnic University of Marche;
- from A.Y. 2013-2014 to 2016-2017 module of 6 credits of Oceanography of the integrated course of Oceanography and Sedimentary Environment master's degree in Marine Biology of the Polytechnic University of Marche.
- from A.Y. 2017-2018 to date module of 5 CFU of Oceanography of the integrated course of Oceanography and Sedimentary Environment master's degree in Marine Biology of the Polytechnic University of Marche

Participation in Oceanographic Campaigns in Mediterranean Sea

- **PRISMA 2 Project** - 15 embarkation periods between 22/07/1996 and 24/05/1998 of different duration and on different nautical vessels - In two campaigns I played the role of scientific manager on board. Study area: Adriatic Sea
- **SIMPLEX** project:
 - on-board period 19/07 / 1997-01 / 08/1997 N / O Urania, study area Sicily Channel
 - on-board period 27/03 / 1997-08 / 04/1998 N / O Urania, study area Sicily Channel
- **ANEMRE project** , May 2005, Urania ship, study area North-Central Adriatic Sea
- **Project Dynamic of Adriatic in Real Time (DART)**- period 2/06 / 2006-7 / 09/2006, PI of the research group, Nave Universitatis
- **VECTOR project** 6 on-board periods between December 2007 and January 2009, 5 times PI of the research team, 1 time Scientific Leader on board. Study area South Tyrrhenian Sea, Nave Urania and Universitatis
- **Oceanographic Cruises Tyr01, Tyr02 e Tyr03** of different duration carried out in the period between January 2010 and December 2011, PI of the research group. Study area South Tyrrhenian Sea, Urania ship
- **RitMare project** :
 - ODW12 oceanographic cruise, period 23/03 / 2012-2 / 04/2012, Study area South Adriatic

Sea, R/V Minerva one

- **TIGRAF campaign**, period 12/02 / 2013-19 / 02/2013, PI of the research group, Study area South Tyrrhenian Sea, R/V Urania

Antarctica expeditions, Southern Ocean and Ross Sea study area:

- XVI mission, period 02/12 / 1999-11 / 01/2000, PI of the research group, Italian Base M.Zucchelli;
- XXI mission, on-board period 30/12 / 2006-27 / 02/2007, R/V Italica
- XXVII mission, on-board period 11/01/2012 - 24/02/2012, R/V Italica
- XXVIII mission, on-board period 03/01 / 2013-19 / 01/2013, PI of research group, Korean polar / oceanographic ship Aron
- XXIX mission, on-board period 28/12 / 2014-28 / 02/2015, R/V Italica
- XXXI mission, on-board period 15/01/2015 - 23/02/2016, R/V Italica
- XXXII mission, on-board n period 29/01/2016 - 24/02/2017, R/V Italica, PI of the MORSEa project and Research Unit Leader of the CELEBER project
- XXXIV mission, on-board period 5/02 / 2019-23 / 03/2109, R/V Araon (South-Korea), PI of research group
- XXXV mission, on-board period 5/01 / 2020-19 / 02/2020, R/V LAura Bassi, PI of two scientific projects (MORSEa and ESTRO)

Research interests:

- Polar Oceanography
- Study of marine currents, at different spatial scales, with an Eulerian and Lagrangian approach
- Use of HF radar for the measurement of the surface current field in the coastal area
- Collection (from naval vessels and structures anchored to the bottom) and analysis of the main physical parameters to characterize the structure and dynamics of the water masses

Participation in projects

Participation in more than 20 projects, between national and international, with different roles, from participation as a researcher to the scientific responsibility of research unit and projects.

To date, PI of the Marine Observatory in the Ross Sea (MORSea) project, a project funded under the National Research Program in Antarctica

To date.

Publication List

1. Poulain, P-M; Mauri, E; Gerin, R; Chiggiato, J; Schroeder, K; Griffa, A; Borghini, M; Zambianchi, E; Falco, P; Testor, P; ",On the dynamics in the southeastern Ligurian Sea in summer 2010,Continental Shelf Research,104083,2020
2. Bagaglini, Leonardo; Falco, Pierpaolo; Zambianchi, Enrico; ",Eddy Detection in HF Radar-Derived Surface Currents in the Gulf of Naples,Remote Sensing,12,1,97, 2020
3. Castagno, Pasquale; Capozzi, Vincenzo; DiTullio, Giacomo R; Falco, Pierpaolo; Fusco, Giannetta; Rintoul, Stephen R; Spezie, Giancarlo; Budillon, Giorgio; ",Rebound of shelf water salinity in the Ross Sea,Nature Communications,10,1,1-6,2019
4. Rivaro P., Ianni C., Raimondi L., Manno C., Sandrini S., Castagno P., Cotroneo Y., Falco P.," Analysis of Physical and Biogeochemical Control Mechanisms on Summertime Surface Carbonate System Variability in the Western Ross Sea (Antarctica) using in Situ and Satellite Data", Remote Sensing, 11, 238; doi:10.3390/rs11030238, 2019
5. Zambianchi E., Trani M., Falco P., "Lagrangian transport of marine litter in the Mediterranean Sea", Frontiers in Environmental Sciences, 5, 5, 2017
6. Castagno P., Falco P., Budillon G., Dinniman M., Spezie G., "Temporal variability of the Circumpolar Deep Water inflow onto the Ross Sea continental shelf", Journal of Marine System, 166, 37-49, 2017
7. Falco P., Trani M., Zambianchi E., "Water mass structure and deep mixing processes in the Tyrrhenian Sea: Results from the VECTOR project", Deep Sea Research Part I, 113, p 7-21, 2016
8. Falco P., Buonocore B., Cianelli D., De Luca L., Giordano A., Iermano I., Kalampokis A., Saviano S., Uttieri M., Zambardino G., Zambianchi E., "Dynamics and sea state in the Gulf of Naples: potential use of HF radar data in an operational oceanographic context", Journal of Operational Oceanography,9, s33-s45
9. Ricchi A., Miglietta MM, Falco P., Benetazzo A., Bonaldo A., Bergamasco A., Sclavo M., Carniel S.," On the use of a coupled ocean–atmosphere–wave model during an extreme cold air outbreak over the Adriatic Sea", Atmospheric Research, doi:10.1016/j.atmosres.2015.12.023, 2016
10. Chiggiato J., Bergamasco A., Borghini M., Falcieri FM, Falco P., Langone L., Miserocchi S., Russo A., Schroeder K.,"Dense-water bottom currents in the Southern Adriatic Sea in spring 2012", Marine Geology, doi:10.1016/j.margeo.2015.09.005, 2016
11. Bellomo I., Griffa A, Cosoli S, Falco P, Gerin R, Iermano I, Kalampokis A, Kokkini Z, Lana A, Magaldi MG, Mamoutos I, Mantovani C, Marmain J, Potiris E, Sayol JM, Barbin Y, Berta M, Borghini M, Bussani A, Corgnati L, Dagneaux Q, Gaggelli J, Guterman P, Mallarino D, Mazzoldi A, Molcard A, Orfila A, Poulain P-M, Quentin C, Tintoré J, Uttieri M, Vetrano A, Zambianchi E, Zervakis V., "Toward an integrated HF radar network in the Mediterranean Sea to improve search and rescue and oil spill response: the TOSCA project experience", Journal of Operational Oceanography, 8-2, p 95-107, 2015
12. Cianelli D.; Falco P.; Iermano I.; Mozzilo P; Uttieri M.; Buonocore B.; Zambardino G.; Zambianchi E., "Inshore/offshore water exchange in the Gulf of Naples", Journal of Marine System, 145, p 37-52, 2015

13. Falco P.; Bunocore B.; Cianelli D.; Di Lemma R.; Giordano. A.; Iermano I.; Kalampokis A.; Saviano S.; Uttieri M.; Zambardino G.; Zambianchi E., "Currents, Tides and Waves measured by an HF Radar in the Gulf of Naples, Geophysical Research Abstract, Vol. 17, EGU2015-7324, 2015
14. Iermano I.; Falco P.; Zambianchi E., "Cross-shelf and along-shelf fluxes derived from observation and modelling in the Gulf of Naples, Geophysical Research Abstract, Vol. 17, EGU2015-12985, 2015
15. M.Trani, P.Falco, E.Zambianchi e G.B. Salleè, " Aspects of the Antarctic Circumpolar Current dynamics investigated with drifter data", Progress in Oceanography, 125, p. 1-15, 2014
16. Martorelli E.; Bosman A.; Casalbore D.; Chiocci F.; Falcini F.; Falco P.; Fusco G.; Morelli E.; Pierdomenico M., "High-resolution seismic stratigraphy, multibeam bathymetry of the Capo Vaticano region (Tyrrhenian Sea) coupled with oceanographic data: interplay between alongslope bottom currents and downslope processes, 2nd Deep-Water Circulation Congress, p.10-12, 2014
17. Cianelli, D.; Uttieri M.; Guida R.; Menna M.; Buonocore B.; Falco P.; Zambardino G.; Zambianchi E.," Land-based remote sensing of coastal basins: use of an HF radar to investigate surface dynamics and transport processes in the Gulf of Naples". In: Enner Alcântara. Remote Sensing: Techniques, Applications and Technologies. p. 1-30, NEW YORK; NOVA Science Publishers, Inc., New York., ISBN: 978-1-62417-140-6, 2013
18. Cianelli, D.; Iermano I.; Mozzillo P.; Uttieri M.; Zambianchi E.; Buonocore B.; Falco P.; De Luca L.; Giordano A.; Zambardino G., "Seasonal variability of inflow and outflow regimes in the Gulf of Naples", EGU General Assembly Conference Abstracts, 15, 5712, 2013
19. Davolio, S.; Miglietta, M.; Carniel S.; Benetazzo A.; Buzz A.; Drofa O.; Falco P.; Fantini M.; Malguzzi P.; Ricchi A.; "The impact of winter 2012 cold outbreak over the Northern Adriatic Sea dynamics: preliminary comparison among data and high resolution operational atmospheric models", EGU General Assembly Conference Abstracts, 15, 13994, 2013
20. Iermano I.; Cianelli D.; Falco P.; Uttieri M.; Zambianchi E.; "Characterizing the coastal dynamics behaviour within the Gulf of Naples using modelling, HF radar and in situ measurements", EGU General Assembly Conference Abstracts, 15, 4587, 2013
21. Schroeder, K.; Chiggiato, Haza, A.C.; Griffa A; Özgökmen, T.M.; Zanasca P.; Molcard, A.; Borghini, M.; Poulain, P.M.; Gerin, R.; Zambianchi E.; Falco P.; Trees C., "Targeted Lagrangian sampling of submesoscale dispersion at a coastal frontal zone, Geophysical Research Letters, 39, 11, 2012
22. Iermano, I.; Uttieri M. ; Zambianchi. E; Buonocore B.; Cianelli D.; Falco P.; Zambardino G.; " Integration of numerical modeling and observations for the Gulf of Naples monitoring network", EGU General Assembly Conference Abstracts, 14, 9046, 2012
23. Cianelli, D.; Uttier M.; Buonocor B.; Falco P.; Zambardin G.; Zambianchi E.; "Dynamics of a very special Mediterranean coastal area: The Gulf of Naples", "Mediterranean Ecosystems: Dynamics, Management and Conservation", 2012, New York: Nova Sci. Publ, ISBN: 978-1-61209-146-4, 2012
24. Trani, M.; Falco, P.; Zambianchi E.; "Near-surface eddy dynamics in the Southern Ocean Polar Research, 30, 2011

25. Pierini S.; Falco P.; Zambardino G.; McClimans T.A.; Ellingsen I., "A Laboratory Study of Nonlinear Western Boundary Currents, with Application to the Gulf Stream Separation due to Inertial Overshooting", *Journal of Physical Oceanography*, 41, 11, 2063-2079, 2011
26. Uttieri M.; Cianelli D.; Nardelli B.B.; Buonocore B.; Falco P.; Colella S.; Zambianchi E.; "Multiplatform observation of the surface circulation in the Gulf of Naples (Southern Tyrrhenian Sea), *Ocean Dynamics*, 61, 6, 779-796, Springer-Verlag, 2011
27. Falco, P.; Zambianchi E.; "Near-surface structure of the Antarctic Circumpolar Current derived from World Ocean Circulation Experiment drifter data", *Journal of Geophysical Research: Oceans* (1978–2012), 116, C5,, 2011
28. Buonocore, B.; Cianelli D.; Falco P.; Guida R.; Uttieri M.; Zambardino G.; Zambianchi E.; "Hydrocarbon dispersal in the Gulf of Naples: a parametric study", *Rapp Comm int Mer Médit*, 39, 725, 2010
29. Pierini S.; Falco P.; Zambardino G.; "Nonlinear effects on western boundary current structure and separation: a laboratory study", *EGU General Assembly Conference Abstracts*, 11,, 3316, 2009
30. Trani, M.; Falco P.; Zambianchi, E.; "Study of the eddy fluxes in the Southern Ocean", *EGU General Assembly Conference Abstracts*, 11,, 5468, 2009
31. Bentivegna F.; Valentin F.; Falco P.; Zambianchi E.; Hochscheid S.; "The relationship between loggerhead turtle (*Caretta caretta*) movement patterns and Mediterranean currents", *Marine Biology*, 151, 5, 1605-1614, Springer-Verlag, 2007
32. Falco P.; Belardinelli A.; Santojanni A.; Cingolani N.; Russo A.; Arneri E.; "An observing system for the collection of fishery and oceanographic data", *Ocean Science*, 3, 2, 189-203, Copernicus GmbH, 2007
33. Falco P.; Zambianchi E.; "Mean and eddy features of the Antarctic Circumpolar Current", *Geophysical Research Abstracts*, 9, 08228, 2007
34. Falco, P.; Lignitto V.; Poulain P.M.; Zambianchi E.; "Drifter Observations of the Surface Dynamics of the Tyrrhenian Sea.", *EGS-AGU-EUG Joint Assembly*, 1,, 9940, 2003
35. Falco, P.; Griffa A.; Poulain, P.M.; Zambianchi E.; "Transport properties in the Adriatic Sea as deduced from drifter data", *Journal of Physical Oceanography*, 30, 8, 2055-2071, 2000
36. Zambianchi, E.; Budillon G.; Falco P.; Spezie G.; "Observations of the Dynamics of the Antarctic Circumpolar Current in the Pacific Sector of the Southern Ocean", *Oceanography of the Ross Sea Antarctica*, 37-50, Springer Milan, 1999
37. Buffoni, G.; Falco, P.; Griffa A.; Zambianchi E.; "Dispersion processes and residence times in a semi-enclosed basin with recirculating gyres: An application to the Tyrrhenian Sea", *Journal of Geophysical Research: Oceans*, 102, C8, 18699-18713, 1997

Publication submitted :

-Alessandro Silvano, Annie Foppert, Stephen R. Rintoul, Paul R. Holland, Takeshi Tamura, Noriaki Kimura, Pasquale Castagno, Pierpaolo Falco, Giorgio Budillon, F. Alexander Haumann, Alberto Naveira Garabato and Alison Macdonald: Recovery of Antarctic Bottom Water formation driven by anomalous climate forcing, submitted to *Nature Geoscience*

M. Menna, Y. Cotroneo, P. Falco, E. Zambianchi, R. Di Lemma, P.-M. Poulain, G. Fusco, G. Budillon: Response of the Pacific Sector of the Southern Ocean to the wind stress variability from 1995 to 2017 2, submitted to Journal of Geophysical Research

Paolo Celentano, Pierpaolo Falco, Enrico Zambianchi; Surface Connection of different areas of the Mediterranean Sea derived from drifter data, submitted to Deep Sea Research part I

To date

Pierpaolo Falco