



Europass Curriculum Vitae

Personal information

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Education and training

Dates	2010
Title of qualification awarded	PhD in Satellite Oceanography
Principal subjects/occupational skills covered	Thesis title: A satellite view of the space-time variability of phytoplankton biomass in the Mediterranean Sea
Name and type of organisation providing education and training	University of Southampton – National Oceanography Centre, Southampton
Dates	2002
Title of qualification awarded	International Summer School on Atmospheric and Oceanic Sciences: Remote Sensing of the Earth's Environment from TERRA
Principal subjects/occupational skills covered	Remote sensing of the earth's environment from MODIS-Terra
Name and type of organisation providing education and training	University of l'Aquila, Italy
Dates	2001
Title of qualification awarded	University degree (5 years)
Principal subjects/occupational skills covered	Thesis title: Remote sensing of the Saharan dust load over the Mediterranean Sea and its impact on the phytoplankton biomass
Name and type of organisation providing education and training	Università degli Studi di Napoli "Parthenope" – Napoli – Italy

Work experience

Dates April 2002 to present
Occupation or position held Research scientist (permanent position)
Name and address of employer Satellite Oceanography Group within the Institute of Marine Sciences – Italian National Research Council, Via del Fosso del Cavaliere, 100, 00133, Rome, Italy
Type of business or sector Oceanographic Research

Scientific interests

My scientific interests are in the field of biological oceanography, a discipline that interconnect ocean-atmosphere dynamics and chemistry with the ecology of phytoplankton. Since my laurea degree I have been collecting in situ data and using ocean colour observations to understand the processes that most contribute to phytoplankton variability at various space and time scales, from daily to interannual from local to global scale.

Large scale variability involves the ability to handle large volumes of data via parallel processing and advanced statistical tool for their analysis.

Quantification of data uncertainty and accuracy has been an essential and continuous element of my work through comparison between in situ and remote sensing observations.

Throughout my career I have been interested in the following topics most of which translated into operational ocean colour products distributed through Copernicus services:

- **Automation of the underway measurements of inherent optical properties during field campaigns.**
- Bio-optical characteristics of seawater in relation to ocean colour remote sensing and development of chlorophyll algorithms for various sensors.
- Ocean Colour single and multi-sensor data processing
- Ocean Colour data interpolation
- Phytoplankton Space-time variability in relation to different physical forcing (SST, sea level), using advanced statistical tools as principal component analysis, multivariate analysis and coupled analysis of satellite data, model outputs, in situ data.
- Quantification of the transport and deposition of Saharan dust over the Mediterranean Sea using remote sensing data, and their impact on the phytoplankton community of the basin.
- **Contribution to the logistical and scientific organization of several oceanographic cruises during which standard (CTD, water sampling for Lab measurements) and optical (radiometry, inherent optical properties) measurements were planned, led and carried out either continuously or in cast mode.**

Main activities and responsibilities

Activities that I led or contributed to in the context of several national and international projects over the past 18 years.

- **Automation of the underway measurements of inherent optical properties during field campaigns.**
- **Participation to over 15 field cruises for algorithm development and product validation of ocean colour observations through the acquisition of in situ bio-optical measurements: radiometry and IOPs**
- Development and its operational implementation of the Mediterranean Sea algorithm for chlorophyll retrieval in case I water
- Development and its operational implementation of the multi-sensor merging algorithm, within CMEMS
- DINEOF-based algorithm development for the interpolation of ocean colour data over the Mediterranean and Black sea, and its operational implementation within CMEMS
- Setup, reporting and operational management of the ocean colour data processing chain within CMEMS; including periodic versioning and updates over the near-real time chain and the reprocessing of the full data time series, involving several sensors (SeaWiFS, MODIS-AQUA, MERIS, both VIIRS and both OLCI); a continuous effort is continuously made for keeping the satellite products as state-of-the-art within the operational chain.
- Product Quality Manager of the Ocean Colour Thematic Assembly Centre involving the development and operational implementation of ocean colour data quality indices, the annual data and method review against in situ observations
- Design, implementation and setup of the ship-based underway system for acquisition of high quality IOP measurements
- Design and implementation and set-up of the radiometry instrument package and radiometry data analysis at Lampedusa Buoy
- Investigation of the abiotic and biotic environmental controls of ocean colour variability from 1 km and daily scales to basin and interannual scales.
- Attendance of international congresses and project meetings

Projects in which I have or had a significant role:

Acronym	Period	Project	Role
ESA-RACE-SOON	2020 – ongoing	European Space Agency - Rapid Action Covid-19 EO - Satellite Observations for inland and coastal water quality during COVID lock-down	WP leader
AtlantECO	2020 – ongoing	Atlantic Ecosystems Assessment, Forecasting & Sustainability	Task leader
C3S	2019 – ongoing	Copernicus Climate Change Service	Task leader
ESA-OC-CCI+	2019-2021	European Space Agency Ocean Colour Climate Change Initiative Phase 2	WP leader
OCTAC	2015-2021	CMEMS – Copernicus Marine Environment Monitoring Service – Ocean Colour Thematic Assembly Centre	<ul style="list-style-type: none"> ○ WP leader ○ Product Manager ○ Product Quality Leader ○ Scientific Expert ○ Biogeochemical Data Assimilation experts
MyOceanFO	2014-2015	MyOcean Follow On - European Commission Horizon 2020 Framework Programme Grant Agreement- call EU H2020-	<ul style="list-style-type: none"> ○ WP leader ○ Product Manager ○ Product Quality Manager ○ Scientific expert

		Adhoc-2014-20. Grant agreement: 633085	
MyOcean2	2012-2014	Prototype Operational Continuity for GMES Ocean Monitoring and Forecasting Service. Grant Agreement nr. 28336	<ul style="list-style-type: none"> ○ WP leader ○ Product Manager ○ Product Quality Manager ○ Scientific expert
MyOcean	2009-2012	Development and pre-operational validation of GMES Marine Core Services. EU FP7-SPACE-2007-1. Grant Agreement nr. 218812.	<ul style="list-style-type: none"> ○ WP leader ○ Product Manager ○ Product Quality Manager ○ Scientific expert
SeaDataNet	2006-2011	Pan-European infrastructure for Ocean & Marine Data Management. EU FP6 Research infrastructure RII3. Grant Agreement nr. 026212	Task leader
SESAME	2006-2010	Southern European Seas: Assessing and Modelling ecosystem changes. EU integrated project	Task leader
ECOOP	2007-2010	European Coastal Operational Oceanography Project. EU FP6 Priority 1.1.6.3. Grant Agreement nr. 036355-2	Task leader
ADRICOS-EXT	2005-2006	ADRIatic sea integrated COastal areaS and river basin Management system pilot project - EXTension UNESCO. Grant agreement: 303813	Task leader
MERSEA	2004-2007	Marine EnviRonment and Security for the European Area. EU integrated project	WP leader
PRIMI	2008-2010	Progetto pilota Inquinamento Marino da Idrocarburi Agenzia Spaziale Italiana	Task leader
ADIOS	2001-2003	Atmospheric deposition and impact of pollutants, key elements and nutrients on the open Mediterranean Sea – EU FP7 fundings	WP leader
ADRICOSM	2001-2003	ADRIatic sea integrated COastal areaS and river basin Management, Ministero dell'Ambiente	Task leader

Rome, June 12, 2024

Volpe Gianluca

List of peer reviewed publications

Torri M, Russo S, Falcini F, De Luca B, Colella S, Volpe G, Corrado R, Placenti F, Giaramita L, Musco M, Masullo T, Bennici C, Di Natale M V, Patti B, Lacorata G, Arculeo M, Cuttitta A. 2023. Coupling Lagrangian simulation models and remote sensing to explore the environmental effect on larval growth rate: The Mediterranean case study of round sardinella (*Sardinella aurita*) early life stages. *Frontiers in Marine Science*, 9. DOI=10.3389/fmars.2022.1065514

Braga, F., Ciani, D., Colella, S., Organelli, E., Pitarch, J., Brando, V.E., Bresciani, M., Concha, J.A., Giardino, C., Scarpa, G., Volpe, G. Rio M.-H., Falcini, F. COVID-19 lockdown effects on a coastal marine environment: Disentangling perception versus reality. *Science of The Total Environment*, 817. 153002. 2022. Elsevier

Yang C., Cagnazzo C., Artale V., Buongiorno B., Buontempo C., Busatto J., Caporaso L., Cesarini C., Cionni I., Coll J., Crezee B., Cristofanelli P., de V., Hesham Y., Eyring V., Fierli F., Grant L., Hassler B., Hirschi M., Huybrechts P., Le E., Elisa F., Lin X., Madonna F., Mason E., Massonnet F., Marcos M., Marullo S., Müller B., Obregon A., Organelli E., Palacz A., Pascual A., Pisano A., Putero D., Rana A., Sánchez-Román A., Seneviratne I.S., Serva F., Storto A., Thiery W., Throne P., Van L., Verhaegen Y., Volpe G., Santoleri R. Independent Quality Assessment of Essential Climate Variables: Lessons learnt from the Copernicus Climate Change Service. *Bulletin of the American Meteorological Society*. 2022

Rio, M-H; Lorenzoni, L; Murakami, H; Falcini, F; Colella, S; Volpe, G; Brando, V; Braga, F; Concha, J; Scarpa, G. Trilateral Water Quality Monitoring from Space during Covid-19. 2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS, 1563-1566, 2021. IEEE

Volpe, G; Dionisi, D; Brando, VE; Colella, S; Pitarch, Jaime; Ciampichetti, S; Ferrara, N; Liberti, GL; Single dual mode (continuous and cast) instrumentation package for inherent optical property measurements: Characterization of the bucket for backscattering observation. *Limnology and Oceanography: Methods*, 19, 8, 510-522, 2021, John Wiley & Sons, Inc. Hoboken, USA

Bellacicco, Marco; Pitarch, Jaime; Organelli, Emanuele; Martinez-Vicente, Victor; Volpe, Gianluca; Marullo, Salvatore; Improving the retrieval of carbon-based phytoplankton biomass from Satellite Ocean Colour Observations. *Remote Sensing* 12, 21, 3640, 2020, MDPI

Bracaglia, M., Santoleri, R., Volpe, G., Colella, S., Benincasa, M., Brando, V.E. A virtual geostationary ocean color sensor to analyze the coastal optical variability. *Remote Sensing*, 2020, 12, 10.

Liberti, G.L., D'Alimonte, D., di Sarra, A., Mazeran, C., Voss, K., Yarbrough, M., Bozzano, R., Cavaleri, L., Colella, S., Cesarini, C., Kajiyama, T., Meloni, D., Pomaro, A., Volpe, G., Yang, C., Zagolski, F., Santoleri, R. European radiometry buoy and infrastructure (EURYBIA): A contribution to the design of the European copernicus infrastructure for ocean colour system vicarious calibration. *Remote Sensing*, 2020, 12, 7.

Pitarch, J., Bellacicco, M., Organelli, E., Volpe, G., Colella, S., Vellucci, V., Marullo, S. Retrieval of particulate backscattering using field and satellite radiometry: Assessment of the QAA algorithm. *Remote Sensing*, 2020, 12, 1.

Dionisi, D., Brando, V.E., Volpe, G., Colella, S., Santoleri, R. Seasonal distributions of ocean particulate optical properties from spaceborne lidar measurements in Mediterranean and Black sea. *Remote Sensing of Environment*, 2020, 247.

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Bellacicco, M., Cornec, M., Organelli, E., Brewin, R.J.W., Neukermans, G., Volpe, G., Barbieux, M., Poteau, A., Schmechtig, C., D'Ortenzio, F., Marullo, S., Claustre, H., Pitarch, J. Global Variability of Optical Backscattering by Non-algal particles From a Biogeochemical-Argo Data Set. *Geophysical Research Letters*, 2019, 46, 16, 9767-9776.

Volpe, G., Colella, S., Brando, V.E., Forneris, V., La Padula, F., Di Cicco, A., Sammartino, M., Bracaglia, M., Artuso, F., Santoleri, R. Mediterranean ocean colour Level 3 operational multi-sensor processing. *Ocean Science*, 2019, 15, 1, 127-146.

Bracaglia, M., Volpe, G., Colella, S., Santoleri, R., Braga, F., Brando, V.E. Using overlapping VIIRS scenes to observe short term variations in particulate matter in the coastal environment. *Remote Sensing of Environment*, 2019, 233.

- Volpe, G., Nardelli, B. B., Colella, S., Pisano, A., Santoleri, R. (2018). Operational Interpolated Ocean Colour Product in the Mediterranean Sea. In *New Frontiers in Operational Oceanography*, E. Chassignet, A. Pascual, J. Tintoré, and J. Verron, Eds., GODAE OceanView, 227-244.
- Bellacicco, M., Volpe, G., Briggs, N., Brando, V., Pitarch, J., Landolfi, A., Colella, S., Marullo, S., Santoleri, R. Global Distribution of Non-algal Particles From Ocean Color Data and Implications for Phytoplankton Biomass Detection. *Geophysical Research Letters*, 2018, 45, 15, 7672-7682.
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- Volpe, G., Colella, S., Forneris, V., Tronconi, C., Santoleri, R. The Mediterranean Ocean Colour Observing System: System development and product validation. *Ocean Science*, 2012, 8, 5, 869-883.
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Relevant recent documents from CMEMS project

Volpe G., S. Colella, V. E. Brando, A. Di Cicco, D. D'Alimonte, V. Forneris, M. Bracaglia, M. Benincasa, J A. Concha. Product Quality Information Document for Mediterranean and Black Sea Products. <https://resources.marine.copernicus.eu/documents/QUID/CMEMS-OC-QUID-009-038to045-071-073-078-079-095-096.pdf> (2019)

Volpe G., R. Santoleri, S. Colella, V. Forneris, P. Garnesson, M. Taberner, S. Pardo, V.E. Brando, B. Taylor, M. Grant, E. Böhm, J. Netting. Product User Manual for all ocean colour products within CMEMS – Ocean Colour Thematic Assembly Centre. <https://resources.marine.copernicus.eu/documents/PUM/CMEMS-OC-PUM-009-ALL.pdf> (2019)