


## PERSONAL INFORMATION

## Federica Braga

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Publication Record: h-index 22, total number of citations 1509 (assessed March 2024, Google Scholar).

## WORK EXPERIENCE

From 2009

### Research Scientist at Institute of Marine Sciences - National Research Council of Italy (CNR-ISMAR)

Arsenale Tesa 104, Castello 2737/F, 30122 Venezia, Italy

Main activities and responsibilities:

- Her research activities focus on remote sensing of coastal areas, using multi- and hyperspectral data, for the retrieval of water quality parameters in optically complex environments.
- She has expertise in the analysis of satellite-derived products in conjunction with field data and numerical models for the understanding of coastal processes and forcings.
- She is working on collecting and processing of in situ surveys and measurements with optical specific instruments for the retrieval of apparent and inherent optical properties along water column.
- Project manager, principal investigator, scientific coordinator, Key person and WPs responsible of many national and international projects and research activities on the assessment and monitoring of water quality status in coastal and transitional areas with remote sensing methods, attracting over € 1.000K in Research Framework eligible research income since 2010.
- CNR-ISMAR Deputy of CNR WG "Space Economy" since 2018 and CNR member of the IRIDE Integrated Project Team since 2023.

## EDUCATION AND TRAINING

2000

### Laurea (M.Sc) in Environmental Sciences - University of Ca' Foscari, Venezia, Italy

- Thesis: Gestione del sistema estuario-fascia costiera del litorale di Chioggia: dinamica costiera naturale e implicazioni per l'evoluzione delle caratterizzazioni socio-economiche

## RESEARCH PROJECTS

ongoing

- 2023-2026: NECCTON - NEW COPERNICUS CAPABILITY FOR TROPHIC OCEAN NETWORKS. Grant Agreement n. 101081273. HORIZON-CL4-2022-SPACE-01-41 - Copernicus Marine Environment Monitoring Service evolution. Role: CNR Principal Investigator.
- 2023-2025: UEIKAP - Unveil and Explore the In-depth Knowledge of earth observation data for maritime Applications. Research Projects of National Interest (PRIN) funded by Italian Ministry of University and Research. Role: WP leader.
- 2022-2025: PANDA-WATER - PRISMA Products AND Applications for inland and coastal WATER, Research Call PRISMA SCIENZA DC-UOT-2019-061. Role: Principal Investigator and Scientific coordinator.
- 2019-2024: PRISCAV, Attività Scientifica di CAL/VAL della missione PRISMA, ACCORDO ASI - CNR n. 2018-6-Q.0 ACCORDO ATTUATIVO. Role: WP leader.

Past Projects

- 2021-2022: Affidamento delle attività relative allo sviluppo di prodotti iperspettrali prototipali evoluti nell'ambito del Programma Congiunto iperspettrale "SHALOM". Role: WP leader.
- 2020-2023: CERTO - Copernicus Evolution-Research for Transitional-water Observation, EU-H2020, Grant Agreement nr. 870349. Role: CNR-ISMAR Team.

- 2018-2022: Venezia2021- Programma di ricerca scientifica per una laguna “regolata”, Provveditorato Interregionale per il Veneto, Trentino Alto Adige, Friuli Venezia Giulia del Ministero Infrastrutture e Trasporti. Role: Leader of Linea 1.4 - Rilevazione e previsione di eventi anossici con metodologie di remote sensing.
- 2017-2020: CoastObs, Commercial service platform for user-relevant coastal water monitoring services based on Earth observation (H2020-EO-2017, topic EO-1-2017 - Downstream applications, N. 776348). Role: Leader WP5 Demonstration cases: service delivery and assessment.
- 2017-2020: CosteLab - Laboratorio Virtuale per la Gestione delle Coste, Progetto Premiale "Rischi Naturali Indotti dalle Attività Umana" - COSTE – (ASI – e-GEOS). Role: CNR-ISMAR Team.
- 2016-2017: Hyperspectral Imaging Mission Concepts, ITT ESRIN/AO/1-8579/16/I-SBo, ESA, ESA Contract No. 4000119181/16/I-SBo. Role: CNR Team Leader.
- 2011-2015: CLAM-PHYM, Coasts and Lake Assessment and Monitoring by PRISMA Hyperspectral Mission, Studi Scientifici per la missione iperspettrale PRISMA, ASI, Contratto N. I/015/11/0. Role: Project manager and WP leader
- 2008-2009: CIRCE - Progetto Preliminare “Controllo Integrato del Rischio Costiero-CIRCE” (n. I/055/08/0), ASI. Role: WP leader and CNR-ISMAR Team.

## PUBLICATIONS

- Pellegrino, A., Fabbretto, A., Bresciani, M., de Lima, T. M. A., Braga, F., Pahlevan, N., ... & Giardino, C. (2023). Assessing the accuracy of PRISMA standard reflectance products in globally distributed aquatic sites. *Remote Sensing*, 15(8), 2163.
- Braga, F., Fabbretto, A., Vanhellemont, Q., Bresciani, M., Giardino, C., Scarpa, G. M., ... & Brando, V. E. (2022). Assessment of PRISMA water reflectance using autonomous hyperspectral radiometry. *ISPRS Journal of Photogrammetry and Remote Sensing*, 192, 99-114.
- Braga, F., Ciani, D., Colella, S., Organelli, E., Pitarch, J., Brando, V. E., ... & Falcini, F. (2022). COVID-19 lockdown effects on a coastal marine environment: Disentangling perception versus reality. *Science of the Total Environment*, 817, 153002.
- Scarpa, G. M., Braga, F., Manfè, G., Lorenzetti, G., & Zaggia, L. (2022). Towards an Integrated Observational System to Investigate Sediment Transport in the Tidal Inlets of the Lagoon of Venice. *Remote Sensing*, 14(14), 3371.
- Bernardi Aubry, F., Acri, F., Scarpa, G. M., & Braga, F. (2020). Phytoplankton–Macrophyte Interaction in the Lagoon of Venice (Northern Adriatic Sea, Italy). *Water*, 12(10), 2810.
- Braga, F., Scarpa, G. M., Brando, V. E., Manfè, G., & Zaggia, L. (2020). COVID-19 lockdown measures reveal human impact on water transparency in the Venice Lagoon. *Science of The Total Environment*, 736, 139612.
- Giardino, C., Bresciani, M., Braga, F., Fabbretto, A., Ghirardi, N., Pepe, M., ... & Brando, V. E. (2020). First Evaluation of PRISMA Level 1 Data for Water Applications. *Sensors*, 20(16), 4553.
- Villa, P., Bresciani, M., Bolpagni, R., Braga, F., Bellingeri, D., & Giardino, C. 2020. Impact of upstream landslide on perialpine lake ecosystem: an assessment using multi-temporal satellite data. *Science of The Total Environment*, 137627.
- Bracaglia, M., Volpe, G., Colella, S., Santoleri, R., Braga, F., & Brando, V. E. 2019. Using overlapping VIIRS scenes to observe short term variations in particulate matter in the coastal environment. *Remote Sensing of Environment*, 233, 111367.
- Bellafiore, D., Ferrarin, C., Braga, F., Zaggia, L., Maicu, F., Lorenzetti, G., ... & De Pascalis, F. 2019. Coastal mixing in multiple-mouth deltas: A case study in the Po delta, Italy. *Estuarine, Coastal and Shelf Science*, 226, 106254.
- Giardino, C., Brando, V. E., Gege, P., Pinnel, N., Hochberg, E., Knaeps, E., Reusen, I., Doerffer, R., Bresciani, M., Braga, F., Foerster, S., Champollion, N. & Foerster, S. 2019. Imaging spectrometry of inland and coastal waters: state of the art, achievements and perspectives. *Surveys in Geophysics*, 40(3), 401-429.
- Dekker, A., Pinnel, N., Gege, P., Briottet, X., Peters, S., Turpie, K., ... & Braga, F. 2018. Feasibility Study of an Aquatic Ecosystem Earth Observing System.
- Manzo, C., Braga, F., Zaggia, L., Brando, V. E., Giardino, C., Bresciani, M., & Bassani, C. (2018). Spatio-temporal analysis of prodelta dynamics by means of new satellite generation: the case of Po river by Landsat-8 data. *International Journal of Applied Earth Observation and Geoinformation*, 66, 210-225.
- Braga, F., Zaggia, L., Bellafiore, D., Bresciani, M., Giardino, C., Lorenzetti, G., ... & Brando, V. E. (2017). Mapping turbidity patterns in the Po river prodelta using multi-temporal Landsat 8 imagery. *Estuarine, Coastal and Shelf Science*, 198, 555-567.

- Carol, E., Braga, F., Donnici, S., Kruse, E., & Tosi, L. (2017). The hydrologic landscape of the Ajó coastal plain, Argentina: An assessment of human-induced changes. *Anthropocene*, 18, 1-14.
- Giardino, C., Bresciani, M., Braga, F., Cazzaniga, I., De Keukelaere, L., Knaeps, E., & Brando, V. E. (2017). Bio-optical Modeling of Total Suspended Solids. In *Bio-optical Modeling and Remote Sensing of Inland Waters* (pp. 129-156).
- Xing, Q., Braga, F., Tosi, L., Lou, M., Zaggia, L., Teatini, P., ... & Shi, P. (2016). Detection of Low Salinity Groundwater Seeping into the Eastern Laizhou Bay (China) with the Aid of Landsat Thermal Data. *Journal of Coastal Research*, 74(sp1), 149-156.
- Lauritano, C., Romano, G., Roncalli, V., Amoresano, A., Fontanarosa, C., Bastianini, M., ... & Ianora, A. (2016). New oxylipins produced at the end of a diatom bloom and their effects on copepod reproductive success and gene expression levels. *Harmful algae*, 55, 221-229.
- McKiver, W. J., Sannino, G., Braga, F., and Bellafiore, D., 2016. Investigation of model capability in capturing vertical hydrodynamic coastal processes: a case study in the north Adriatic Sea, *Ocean Science*, 12, 51-69.
- Carol, E., Braga, F., Da Lio, C., Kruse, E., & Tosi, L., 2015. Environmental isotopes applied to the evaluation and quantification of evaporation processes in wetlands: a case study in the Ajó Coastal Plain wetland, Argentina. *Environmental Earth Sciences*, 74(7), 5839-5847.
- Brando, V. E., Braga, F., Zaggia, L., Giardino, C., Bresciani, M., Bellafiore, D., Ferrarin, C., Maicu, F., Benetazzo, A., Bonaldo, D., Falcieri, F.M., Coluccelli, A., Russo, A. & Camiel, S., 2015. High-resolution satellite turbidity and sea surface temperature observations of river plume interactions during a significant flood event. *Ocean Science*, 11(6), 909-920.
- Xing, Q., Tosi, L., Braga, F., Gao, X., & Gao, M. (2015). Interpreting the progressive eutrophication behind the world's largest macroalgal blooms with water quality and ocean color data. *Natural Hazards*, 1-15.
- Bassani, C., Manzo, C., Braga, F., Bresciani, M., Giardino, C., & Alberotanza, L., 2015. The impact of the microphysical properties of aerosol on the atmospheric correction of hyperspectral data in coastal waters. *Atmospheric Measurement Techniques*, 8(3), 1593-1604.
- Manzo, C., Bresciani, M., Giardino, C., Braga, F., & Bassani, C., 2015. Sensitivity analysis of a bio-optical model for Italian lakes focused on Landsat-8, Sentinel-2 and Sentinel-3. *European Journal of Remote Sensing*, 48, 17-32.
- Giardino, C., Bresciani, M., Cazzaniga, I., Schenk, K., Rieger, P., Braga, F., Matta, E., & Brando, V. E. (2014). Evaluation of multi-resolution satellite sensors for assessing water quality and bottom depth of Lake Garda. *Sensors*, 14(12), 24116-24131.
- Carretero, S., Braga, F., Kruse, E., & Tosi, L., 2014. Temporal analysis of the changes in the sand-dune barrier in the Buenos Aires Province, Argentina, and their relationship with the water resources. *Applied Geography*, 54, 169-181.
- Villa, P., Bresciani, M., Braga, F., & Bolpagni, R., 2014. Comparative assessment of broadband vegetation indices over aquatic vegetation. *Selected Topics in Applied Earth Observations and Remote Sensing*, *IEEE Journal of*, 7(7), 3117-3127.
- Carol, E. S., Braga, F., Kruse, E. E., & Tosi, L., 2014. A retrospective assessment of the hydrological conditions of the Samborombón coastland (Argentina). *Ecological Engineering*, 67, 223-237.
- Bresciani, M., Rossini, M., Morabito, G., Matta, E., Pinardi, M., Cogliati, S., Julitta, T., Colombo, R., Braga, F., & Giardino, C., 2013. Analysis of within-and between-day chlorophyll-a dynamics in Mantua Superior Lake, with a continuous spectroradiometric measurement. *Marine and Freshwater Research*, 64(4), 303-316.
- Braga, F., Giardino, C., Bassani, C., Matta, E., Candiani, G., Strömbeck, N., Adamo, P. & Bresciani, M. 2013. Assessing water quality in the northern Adriatic Sea from HICO™ data. *Remote Sensing Letters*, 4(10), 1028-1037.
- Braga, F., Tosi, L., Prati, C., & Alberotanza, L., 2013. Shoreline detection: capability of COSMO-SkyMed and high-resolution multispectral images. *European Journal of Remote Sensing*, 46, 837-853.
- Bresciani, M., Bolpagni, R., Braga, F., Oggioni, A., & Giardino, C., 2012. Retrospective assessment of macrophytic communities in southern Lake Garda (Italy) from in situ and MIVIS (Multispectral Infrared and Visible Imaging Spectrometer) data. *Journal of Limnology*, 71(1), 19.

Venezia,

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV