

PERSONAL INFORMATION

Vittorio Ernesto Brando

Male | Date of birth [REDACTED] | Nationality [REDACTED]

Consiglio Nazionale delle Ricerche - Istituto di Scienze Marine (CNR-ISMAR)
Via Fosso del Cavaliere, 100 - Roma, Italy

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WORK EXPERIENCE

2020 – to date

Dirigente di Ricerca (Research Director)

CNR-ISMAR, Via Fosso del Cavaliere, 100, Roma, Italy

- Leader for the Ocean Colour Thematic Assembly Center, Copernicus Marine Environment Monitoring Service; delivery of operational ocean colour data streams in the ocean-observing infrastructure for European coastal and marine environments.
- Partner PI (or WP leader) for H2020, ESA, EUMETSAT and ASI projects for research activities focused on earth observation of coastal waters.

2016 – 2019

Ricercatore, Primo Ricercatore (Research Scientist, Principal Research Scientist)

CNR-ISMAR, Via Fosso del Cavaliere, 100, Roma, Italy

- Deputy Leader for the Ocean Colour Thematic Assembly Center, Copernicus Marine Environment Monitoring Service; delivery of operational ocean colour data streams in the ocean-observing infrastructure for European coastal and marine environments.
- Partner PI for two H2020 projects (CoastObs and HYPERNETS)

2014 - 2015

Senior Marie Curie Fellow

CNR-IREA, Via Bassini, 15, Milano, Italy

- Research activities focused on earth observation of optically complex waters, with the development and implementation of physics based inversion algorithm for the retrieval of water quality parameters in optically deep and shallow systems.
- Optical oceanography in inland, estuarine and coastal systems, hyperspectral signal and imagery analysis, radiative transfer models.
- investigation of earth observation classes suitable for fine scale processes in coastal and shelf waters.

2007-2014

Senior Research Scientist, Principal Research Scientist

CSIRO Land & Water, Clunies Ross St, Acton ACT, Australia

- Principal Investigator for several large collaborative projects (~6.4MA\$, ~4.6MEUR) focussed on the development of applications of Earth Observation for the environmental management of the Great Barrier Reef coastal waters and on the addition of optical oceanography data streams to the ocean-observing infrastructure in Australian coastal and marine environments
- Research activities focused on earth observation of coastal waters, with the development and implementation of physics based inversion algorithm for the retrieval of water quality parameters in optically deep and shallow systems

2000-2007

PostDoctoral Scientist, Research Scientist

CSIRO Land & Water, Clunies Ross St, Acton ACT, Australia

- Research activities focused on earth observation in Australian coastal and marine environments, with the development and implementation of physics based inversion algorithm for the retrieval of water quality parameters in optically deep and shallow systems.
- Optical oceanography in inland, estuarine and coastal systems, hyperspectral signal and imagery analysis, radiative transfer models.

ADJUNCT POSITIONS

2016-to date

Adjunct Science Leader

CSIRO Oceans & Atmosphere Clunies Ross St, Acton ACT, Australia

- Collaborative research activities focused on observing systems, optical oceanography and

- earth observation of optically complex waters in Australian inland, coastal and marine environments. optical oceanography data streams to the ocean-observing infrastructure in Australian coastal and marine environments
- 2006-2013 **Adjunct Lecturer, Adjunct Senior Lecturer**
School of Geography, Planning and Environmental Management, University of Queensland, Brisbane, Australia
- PhD Advisor for two PhD students

EDUCATION AND TRAINING

- 1997 - 2000 Dottorato di Ricerca in Modellistica dei Sistemi Ambientali
Facoltà di Ingegneria, Università di Padova
- Environmental sciences, ecological modeling, remote sensing of coastal aquatic environments, hyperspectral imagery analysis, aquatic ecology
 - Thesis topic: 'I dati telerilevati iperspettrali e i modelli trofici quali strumenti descrittivi della condizione ecologica della laguna di Orbetello'
- 1989 – 1995 Laurea in Scienze Ambientali (110 e Lode)
Corso di Laurea in Scienze Ambientali, Facoltà di Scienze, Università di Venezia
- Environmental sciences, ecological modeling, aquatic ecology .
 - Thesis topic 'Modellizzazione tridimensionale del ciclo dell'ossigeno in Laguna di Venezia: metodi di telerilevamento utilizzabili'

WORK ACTIVITIES

RESEARCH INTERESTS

Vittorio Brando has a background in aquatic ecology and ecological modelling of in shallow water environments. He worked on ecological modelling of macro algae colonies dynamics and of trophic interactions in shallow water basins.

Vittorio's research is focused on earth observation of optically complex waters to enable a better understanding of environmental processes of inland and coastal systems through the translation of earth observation data into information suitable to address societal challenges. His main interests include: optical oceanography in inland and coastal systems, hyperspectral signal and imagery analysis, radiative transfer models, retrieval of water quality parameters from ocean color data, shallow waters mapping, fine scale satellite oceanography, inclusion of ocean colour in operational oceanography data streams.

PROJECT LEADERSHIP EXPERIENCE

Dr Brando has been involved in and has led several large collaborative projects involving personnel across multiple institutions.

Since 2014 Dr Brando is involved in and coordinates EU funded collaborative activities focused on operational oceanography and Earth Observation of coastal environments: Leader of Ocean Colour Thematic Assembly Center within the Copernicus Marine Environment Monitoring Service (~9 M€, 2015-2024), Partner PI (or WP leader) for H2020, Horizon Europe, ESA, EUMETSAT and ASI projects (~2M€).

From 2004 to 2013, he led several collaborative projects (~6.4 MA\$, ~4.6 MEUR) focussed on the development of applications of Earth Observation for the environmental management of the Great Barrier Reef coastal waters and on the addition of optical oceanography data streams to the ocean observing infrastructure in Australian coastal and marine environments.

RESEARCH VOYAGES, INSTRUMENTED SITES

2022 - : PI of HYPSTAR automated hyperspectral radiometer at GAIT site on Pilone Sesarole, Manerba del Garda (H2020 HYPERNETS).

2021 - : PI of HYPSTAR automated hyperspectral radiometer at VEIT site on CNR's Acqua Alta Oceanographic Tower offshore Venice (H2020 HYPERNETS)

2019 - : PI of PANTHYR automated hyperspectral radiometer on CNR's Acqua Alta Oceanographic Tower offshore Venice

2017: PI Research Voyage SENTINEL2017 – N/O MinervaUNO (24/05/2017 -12/06/2017)

2011 - 2015: PI of two DALEC automated hyperspectral radiometers on RV Solander and RV Southern Surveyor (Australia's Integrated Marine Observing System)

	2009 – 2015 : PI of the Lucinda Jetty Coastal Observatory and AERONET-OC site with a CIMEL automated multispectral radiometer at Lucinda Jetty, QLD (Australia's Integrated Marine Observing System)
	2008: PI Research Voyage Far North Queensland - austral wet season - RV James Kirby (8-23 April 2008)
	2008: PI Field Campaign for Fitzroy River Floods in Keppel Bay QLD, daily trips on small vessels
	2007: PI Research Voyage Far North Queensland - austral dry season - RV James Kirby (19-26/9/2007)
ACADEMIC ACTIVITIES	<p>Professore di I Fascia, Abilitazione Scientifica Nazionale - Settore Concorsuale 02/C1, Astronomia, Astrofisica, Fisica Della Terra e dei Pianeti (Italian National Academic Qualification as Full Professor in Astronomy, Astrophysics, Earth and Planetary Physics)</p> <p>Professore di I Fascia, Abilitazione Scientifica Nazionale - Settore Concorsuale 04/A4, Geofisica (Italian National Academic Qualification as Full Professor in Geophysics).</p> <p>Advisor for PhD and MSc students in Italy and in Australia.</p> <p>PhD Thesis Examiner/Opponent in Europe and Australia</p>
AWARDS	<p>"CSIRO Land and Water Publication Award for 2012" for the paper Schroeder, T., M.J. Devlin, V.E. Brando, A.G. Dekker, J.E. Brodie, L.A. Clementson, and L. McKinna, Inter-annual variability of wet season freshwater plume extent into the Great Barrier Reef lagoon based on satellite coastal ocean colour observations. Marine Pollution Bulletin, 2012. 65(4-9): p. 210-223.</p> <p>The paper "Giardino et al., 2007 - Assessment of water quality in Lake Garda (Italy) using Hyperion, Remote Sensing of Environment, 109, 2 (2007), pp. 183-195" is recognised as one of the "Top-50 most cited articles" as published in Remote Sensing of Environment 2007-2010 (As identified by Scopus TM (citations 2007 - November 2010) during the AGU Fall Meeting, San Francisco USA.</p> <p>"CSIRO Land and Water Publication Award for 2009" for the paper Brando, V.E., J.M. Anstee, M. Wettle, A.G. Dekker, S.R. Phinn, and C. Roelfsema, A physics based retrieval and quality assessment of bathymetry from suboptimal hyperspectral data. Remote Sensing of Environment, 2009. 113(4): p. 755-770.</p> <p>Premio Sapio per la Ricerca Italiana 2002 - "Junior Environmental Prize 2002" for the PhD Thesis work in Orbetello Lagoon.</p>
EDITORIAL ACTIVITY	<p>Guest Editor for four special issues: Journal of Applied Remote Sensing (2007), Ocean Sciences (2015-2016), Remote Sensing (2020-2021), Frontiers in Remote Sensing (2023 –)</p> <p>Associate Editor for Journal of Applied Remote Sensing (2008-2013), Remote Sensing (2019 – to date), and Frontiers in Remote Sensing (2021 – to date)</p> <p>Co-Chair and member of the Steering and Scientific Committees for several international conferences and workshops</p> <p>Organizer and Co-Chair of several special sessions at international conferences</p>
INTERNATIONAL WORKING GROUPS, SCIENCE TEAMS, PANELS AND COMMITTEES	<p>2023-: Member of the ESA Copernicus Sentinel-3 Next Generation Optical Mission Advisory Group.</p> <p>2022-: Member of the EMBL Tara4TREC team.</p> <p>2021-: Member of the Application Working Group (AWG) of the EnMAP Science Advisory Group (EnSAG) for DLR.</p> <p>2021-:2023 Member of the ESA Copernicus Sentinel-3 Next Generation Optical Ad Hoc Expert Group.</p> <p>2019-: Committee Member of the International Ocean-Colour Coordinating Group (IOCCG) (the Committee is equivalent to a UNESCO IOC/SCOR working group).</p> <p>2016-2018: Member of the CEOS C10 Feasibility Study Aquatic for Ecosystem Imaging Spectrometer working group</p> <p>2012: Member of the scientific panel tasked to update the ReefPlan Scientific Consensus Statement (invited by the Queensland Department of Premier and Cabinet).</p> <p>2010-2013: Member of the Scientific Steering Committee for the IMOS National Reference Station Network</p>

ADVISORY BOARDS
ROLES

2007-2012: Founding member of the international working group for the “intercomparison of shallow water bathymetry, hydro-optics, and benthos mapping techniques”, funded by US/ONR and ARC.

Member of the Scientific Advisory Board for EU funded projects:

- FP7 (INFORM, 2014-2017)
- H2020 (PrimeWater, 2019-2022; SPACE-O, 2017-2018):

Member of Review Expert Team EUMETSAT projects

- Requirements for Copernicus Ocean Colour Vicarious Calibration Infrastructure (OC-VCAL)”, 2017;
- OLCI Inherent Optical Properties, 2018;
- OLCI Fluorescence; 2018-2019

PUBLICATIONS

PUBLICATIONS
SUMMARY AND
BIBLIOMETRIC INDEXES

Author of 80 journal papers, 12 book chapters, 49 conference papers and 33 technical reports.

	Career citations	h-index	citations for most cited paper	As of 28/08/2023
Google Scholar	8733	44	624	
Scopus	5932	41	405	Scopus ID 6603611887
5162	5296	39	369	ResearcherId A-1321-2008

Author of 22 journal papers with a citation percentile higher than the 95th percentile of citations for the year (WoS InCites).

All PDFs are available at: <http://tinyurl.com/VB-CV-papers>

SELECTED
PUBLICATIONS

- Brando, V.E., S. Pardo, S. Sathyendranath, B. Howey, P. Land, T. Jackson, R. Santoleri, M. Sammartino, S. Colella, K. von Schuckmann, D. Ghafari, E. Smail, K. VanGraafeiland, S. Ramachandran, V. P. Lance, and M. Wang. Potential eutrophication of European waters using satellite derived chlorophyll following the UN Sustainable Development Goal 14 framework. In: Copernicus Ocean State Report, Issue 6, Journal of Operational Oceanography, 15:sup1, s83-s91; DOI: 10.1080/1755876X.2022.2095169
- Brando, V. E.; Sammartino, M.; Colella, S.; Bracaglia, M.; Di Cicco, A.; D’Alimonte, D.; Kajiyama, T.; Kaitala, S.; Attila, J. Phytoplankton Bloom Dynamics in the Baltic Sea Using a Consistently Reprocessed Time Series of Multi-Sensor Reflectance and Novel Chlorophyll-a Retrievals. Remote Sensing 2021, 13 (16), 3071. <https://doi.org/10.3390/rs13163071>.
- Braga, F.; Scarpa, G. M.; Brando, V. E.; Manfè, G.; Zaggia, L. COVID-19 Lockdown Measures Reveal Human Impact on Water Transparency in the Venice Lagoon. Sci. Total Environ. 2020, 736, 139612. <https://doi.org/10.1016/j.scitotenv.2020.139612>.
- 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., Dekker, A., 2019. Imaging Spectrometry of Inland and Coastal Waters: State of the Art, Achievements and Perspectives. Surveys in Geophysics, 40 (3), pp. 401-429. DOI: 10.1007/s10712-018-9476-0
- Le Traon, P-Y and 62 others including Brando, V. E, (2019), From Observation to Information and Users: The Copernicus Marine Service Perspective Front. Mar. Sci., <https://doi.org/10.3389/fmars.2019.00234>
- Sathyendranath, S., and 47 others including Brando, V. E, An Ocean-Colour Time Series for Use in Climate Studies: The Experience of the Ocean-Colour Climate Change Initiative (OC-CCI). Sensors 2019, 19, 4285.
- Hedley, J. D., Roelfsema, C., Brando, V., Giardino, C., Kutser, T., Phinn, S., ... & Koetz, B. (2018). Coral reef applications of Sentinel-2: Coverage, characteristics, bathymetry and benthic mapping with comparison to Landsat 8. Remote Sensing of Environment, 216, 598-614
- Brando, V.E., J.L. Lovell, E.A. King, D. Boadle, R. Scott, and T. Schroeder, The Potential of Autonomous Ship-Borne Hyperspectral Radiometers for the Validation of Ocean Color Radiometry Data. Remote Sensing, 2016. 8(2).
- Brando, V.E., F. Braga, L. Zaggia, C. Giardino, M. Bresciani, E. Matta, D. Bellafiore, C. Ferrarin, F. Maicu, A. Benetazzo, D. Bonaldo, F.M. Falcieri, A. Coluccelli, A. Russo, and S. Carniel, High-resolution satellite turbidity and sea surface temperature observations of river plume interactions during a significant flood event. Ocean Sci., 2015. 11(6): p. 909-920.

- Hestir, E.L., V.E. Brando, M. Bresciani, C. Giardino, E. Matta, P. Villa, and A.G. Dekker, Measuring freshwater aquatic ecosystems: The need for a hyperspectral global mapping satellite mission. *Remote Sens. Environ.*, 2015. 167 p. 181-195.
- Blondeau-Patissier, D., J. Gower, A.G. Dekker, S. Phinn, and V.E. Brando, A review of ocean color remote sensing methods and statistical techniques for the detection, mapping and analysis of phytoplankton blooms in coastal and open oceans *Progress in Oceanography*, 2014. 123: p. 123-144.
- Werdell, P.J., B.A. Franz, S.W. Bailey, G.C. Feldman, E. Boss, V.E. Brando, M. Dowell, T. Hirata, S.J. Lavender, Z. Lee, H. Loisel, S.p. Maritorena, F.d. Mélin, T.S. Moore, T.J. Smyth, D. Antoine, E. Devred, O.H.F. d'Andon, and A. Mangin, Generalized ocean color inversion model for retrieving marine inherent optical properties. *Applied Optics*, 2013. 52(10): p. 2019-2037.
- Brando, V.E., A.G. Dekker, Y.J. Park, and T. Schroeder, Adaptive semianalytical inversion of ocean color radiometry in optically complex waters. *Applied Optics*, 2012. 51(15): p. 2808-2833.
- Brando, V.E., J.M. Anstee, M. Wettle, A.G. Dekker, S.R. Phinn, and C. Roelfsema, A physics based retrieval and quality assessment of bathymetry from suboptimal hyperspectral data. *Remote Sensing of Environment*, 2009. 113(4): p. 755-770.
- Brando, V.E. and A.G. Dekker, Satellite hyperspectral remote sensing for estimating estuarine and coastal water quality. *IEEE Trans.Geosci.Remote Sens.*, 2003. 41(6): p. 1378-1387.