CURRICULUM VITAE

PERSONAL INFORMATION

Family name, First name: Santos da Costa, Vladimir
Date of birth: 25.05.1981
Sex: male
Nationality: Brazil
Researcher unique identifier(s) (ORCID): 0000-0001-7704-1861
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FORMAL EDUCATION

2010 - 2016   Ph.D. in Ocean Engineering.
Institution: Federal University of Rio de Janeiro, UFRJ, Brazil. Year of degree: 2016.
Title: ASSIMILATION OF ALTIMETRY DATA IN THE HIGH-RESOLUTION OCEAN MODELING OF THE SOUTH ATLANTIC.
Advisor: Afonso de Moraes Paiva.

2005 - 2008   M.Sc. in Ocean Engineering.
Institution: Federal University of Rio de Janeiro, UFRJ, Brazil. Year of degree: 2008.
Title: IMPACT OF THERMODINAMICS FORCING ON THE MESOSCALE STRUCTURE OF THE BRAZIL CURRENT.
Advisor: Afonso de Moraes Paiva.

2001 - 2005   B.Sc. in Physics.
Institution: Federal Rural University of Rio de Janeiro, UFRRJ, Brazil. Year of degree: 2005.

1997 - 2000   Professional/Technical Course in Industrial Mechanics.
Institution: Istituto Tecnico Industriale Statale Guglielmo Marconi - Forli, ITIS - FO, Italy.

CURRENT AND PREVIOUS POSITIONS

2021 - current   Centro Euro-Mediterraneo sui Cambiamenti Climatici – CMCC - Italy
Contract: Formal labour contract, *Position*: Researcher.

2023 - 2023   Università del Salento – UniSalento - Italy
Contract: Visitor under special contract, *Position*: Professor.

2018 - 2021   Fugro GB Marine Ltd – Wallingford, United Kingdom
Contract: Formal labour contract, *Position*: Senior Ocean Modeller.

2015 - 2018   Federal University of Rio de Janeiro – Brazil
Contract: Formal labour contract, *Position*: Researcher.

2011 - 2015   Federal University of Rio de Janeiro – Brazil
Contract: Scholarship, *Position*: Ph.D. Student.

2008 - 2011   Federal University of Rio de Janeiro – Brazil
Contract: Formal labour contract, *Position*: Researcher.

LANGUAGES

English   Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent;

Italian   Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent;

Portuguese   Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent;

JOURNAL REVIEWER

2024 - Current   **Ocean Dynamics**

2019 - Current   **Journal of Operational Oceanography**

ARTICLES PUBLISHED IN SCIENTIFIC JOURNALS:

1. **COSTA, VLADIMIR S.** ; ALESSANDRINI, JACOPO ; VERRI, GIORGIA; MENTASCHI, LORENZO; ET AL. Perspectives on Climate Change in the Adriatic Sea through Sea State Indicators. FRONTIERS IN CLIMATE, *under review*, 2024.

2. VERRI, GIORGIA, DE LORENZIS, ALESSANDRO, **COSTA, VLADIMIR S.,** SOROLLA, A., LOCHNER, A., RIBOT, M., ET AL. Salt-wedge estuary's response to rising sea level, reduced discharge and Nature Based Solutions. FRONTIERS IN CLIMATE, *under review*, 2024.

3. MANNARINI, GIANANDREA ; SALINAS, MARIO ; VERRI, GIORGIA ; **COSTA, VLADIMIR S.** ; ET AL. Coastal flood hazard for Lecce, Italy initiates at dunal breaches. FRONTIERS IN CLIMATE, *under review*, 2024.

4. VERRI, GIORGIA ; FURNARI, LUCA ; GUNDUZ, MURAT ; SENATORE, ALFONSO ; **COSTA, VLADIMIR S.** ; ET AL. Climate projections of the Adriatic Sea: role of river release. FRONTIERS IN CLIMATE, v. 6, p. 1368413, 2024.

5. TOFFOLI, MARCELO R. ; PAIVA, AFONSO M. ; **COSTA, VLADIMIR S.** ; MILL, GUILHERME N. . Observations of Internal Tides at the Vitória-Trindade Ridge, South Atlantic Ocean. JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS, v. 128, p. 1-19, 2023.

6. BITTENCOURT, LIS ; BARBOSA, MARIANA ; PAIVA, AFONSO M. ; MILL, GUILHERME N. ; **COSTA, VLADIMIR S.** ; BISI, TATIANA L. ; LAILSON-BRITO, JOSÉ ; AZEVEDO, ALEXANDRE F. . Assessment of cetacean exposure to underwater noise in the southwestern Atlantic ocean. ESTUARINE COASTAL AND SHELF SCIENCE, v. 293, p. 108510, 2023.

7. BUENO, LUANA F.; **COSTA, VLADIMIR S.**; GUILHERME N.; PAIVA, AFONSO M. Volume and Heat Transports by North Brazil Current Rings. Frontiers in Marine Science, 9:831098, 2022.

8. FREITAS, PEDRO P.; PAIVA, AFONSO M.; CIRANO, MAURO; MILL, GUILHERME N.; **COSTA, VLADIMIR S.**; GABIOUX, MARIELA; FRANÇA, BRUNA R. L. Coastal trapped waves propagation along the Southwestern Atlantic Continental Shelf. Continental Shelf Research, v. 226, 2021.

9. DA SILVA, ADILSON C.; HELAYEL, JOSÉ N.; **COSTA, VLADIMIR S.**; A numerical procedure to solve Poisson's equation in spherical coordinates. Revista Brasileira de Ensino de Física, v. 43, 2021.

10. FREITAS, PEDRO P.; AMORIM, FELIPE de L. L.; MILL, GUILHERME N.; **COSTA, VLADIMIR S.**; GABIOUX, MARIELA; CIRANO, MAURO; PAIVA, AFONSO M. Observations of near-inertial oscillations along the Brazilian continental shelf break. Ocean Dynamics, v. 69, p. 1203 – 1215, 2019.

11. PAIVA, AFONSO M.; DAHER, VICTOR B.; **COSTA, VLADIMIR S.**; CAMARGO, SIMONE S. B.; MILL, GUILHERME N.; GABIOUX, MARIELA; ALVARENGA, JOÃO B. R. Internal Tide Generation at the Vitória-Trindade Ridge, South Atlantic Ocean. Journal of Geophysical Research: Oceans, v. 123, 2018.

12. **COSTA, VLADIMIR S.**; MILL, GUILHERME N.; GABIOUX, MARIELA; GROSSMANN MATHESON, GUISELA S.; PAIVA, AFONSO M. The recirculation of the intermediate western boundary current at the Tubarão Bight - Brazil. Deep-Sea Research. Part 1. Oceanographic Research Papers, v.120, p.48 - 60, 2017.

13. MILL, GUILHERME N.; **COSTA, VLADIMIR S.**; LIMA, NATÁLIA D.; GABIOUX, MARIELA; GUERRA, LUIZ ALEXANDRE A.; PAIVA, AFONSO M. Northward migration of Cape São Tomé rings, Brazil. Continental Shelf Research. v.106, p.27 - 37, 2015.

14. MILL, GUILHERME NOGUEIRA; **COSTA, VLADIMIR SANTOS DA**; PAIVA, AFONSO DE MORAES. Design of a rotating table for simulating geophysical flows. Revista Brasileira de Ensino de Física, v.37, p.4302-1 - 4302-7, 2015.

15. GABIOUX, M.; **COSTA, V. S.**; SOUZA, J. M. A. C.; OLIVEIRA, B. F.; PAIVA, A. M. Modeling the South Atlantic Ocean from medium to high-resolution. Brazilian Journal of Geophysics, v.31, p.229 - 242, 2013.

16. **COSTA, V. S.**; PAIVA, A. M. The impact of surface heat fluxes on the simulation of the Brazil Current. Brazilian Journal of Geophysics, v.31, p.307 - 315, 2013.

ACADEMIC ADVISORY:

Co-tutor of Ph.D. thesis:

1. Renata Tatsch Eidt. Begin: 2023. Tese (Ph.D. in Future earth, climate change and societal challenges) - Università di Bologna. (Co-orientador). Advisors: Giorgia Verri and **Vladimir Santos da Costa.**

Tutor of Under graduation's Dissertation:

1. André Mejia Grijó. Characterization of the Intermediate Western Boundary Current along the East Brazilian Coast. Begin: 2017. Course Conclusion Paper – State University of Estado do Rio de Janeiro. Advisor: **Vladimir Santos da Costa.**

2. Sidney Rafael Gomes da Silva. Characterization of 1000m deep circulation and thermohaline structure in the Vitória-Trindade chain region. 2012. Course Conclusion Paper – State

University of Rio de Janeiro. Advisor: **Vladimir Santos da Costa.**

PARTICIPATION IN UNDERGRADUATION BOARD:

1. **COSTA, V. S.** Participation in Boards of Daniela Leite Corrêa. Eddies in the Cabo Frio Oceanic Region, RJ - Brazil, 2017. State University of Rio de Janeiro.

RESEARCH PROJECTIONS:

2024 – Present Italy- Croatia Interreg AdriaClimPLUS
Description: AdriaClimPlus project aims at developing a shared framework for advancing knowledge and proposing optimal solutions for climate change adaptation in the Adriatic basin and its coastal areas.
Situation: : in Progress; *Nature:* Research, WP leader for CMCC

2022 – Present FUTURE COASTAL OCEAN CLIMATES - FLAME
Description: FLAME will generate innovative, high-resolution, downscaled decadal to centennial projections of future coastal ocean climates and the impacts on coastal ecosystems, hazards, services and resources at the local-regional scales necessary for informed decision making.It will achieve this by making a step-change in regional Earth System Model process fidelity and climate downscaling approaches, and by providing new projections, downscaling, predictive and hazard assessment tools. FLAME sets a high-level framework to be collectively pursued throughout the Decade, aiming to inform future IPCC reporting. Partners here will target specific polar, temperate, subtropical and tropical regional coastal oceans where initial progress will be made. It will use CoastPredict, other Decade programmes and partner stakeholder networks to turn advances in understanding and predictive ability into actionable products that can inform climate change adaptation and mitigation solutions.This Project is is hosted by the Ocean Decade Programme CoastPredict.
Situation: : in Progress; *Nature:* Research.

2022 – Present EstuarIO Estuarine box model for Interfacing rivers and Ocean
*Description:*EstuarIO aims to combine capacities to handle observational data and advanced modeling approaches to improve surface boundary conditions in the Copernicus Marine regional configurations.
Situation: : in Progress; *Nature:* Research.

2020 - 2023 AdriaClim Climate change information, monitoring and management tools for adaptation strategies in Adriatic coastal areas
Description: The main objective of AdriaClim is to improve climate resilience in the cooperation area, by increasing the capacity to develop new climate adaptation plans and update existing ones and develop mitigation strategies based on high resolution, more accurate and reliable climate information (observations and integrated modeling) focussed on the coastal and marine areas (threatened by risks such as sea level rise, sea temperature and salinity anomalies, coastal erosion and salinization of freshwater) and related economic sectors and ecosystem services. AdriaClim aims at developing an Adriatic scale regional plus local scale for each Pilot integrated information systems composed by hydro-meteo-marine climatological databases (model scenarios and observation) and knowledge-based tools (e.g indicators) for advanced dynamical implementation of regional climate adaptation plans relevant and accessible for entire the Programme area and Countries.
Situation: Concluded; *Nature:* Research

2020 – Present MaCoBioS Marine Coastal Ecosystems Biodiversity and Services in a Changing World
Description: MaCoBioS contributes to improve the biological and ecological knowledge on the spatio-temporal dynamics of marine biodiversity response to CC and the modelling of marine coastal socio-ecological systems in the context of Nature based Solutions (NBSs). Overall, this leads to strengthened management and conservation strategies of European marine natural capital in line with the work of the Convention on Biological Diversity, the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services and the IPCC among others.
Situation: in Progress; *Nature:* Research.

2018 – 2022 Operandum OPEn-air laboRAtories for Nature baseD solUtions

Description: OPERANDUM intends to provide science-based evidence for the usability of Nature Based Solutions, NBS, locally and at wider scale, and to propose best practices for their design, upscaling and replication in Europe and other territories; identify strategic pathways for their acceptance and promotion in a multi-stakeholdership environment.
Situation: Concluded; *Nature:* Research

2017 - 2020 MOnitoramento da VARiabilidade regional do transporte de calor e volume na camada superficial do oceano Atlântico Sul entre o Rio de Janeiro (RJ) e a Ilha Trindade – MOVAR

Description: O projeto MOVAR (Monitoramento da Variabilidade do Transporte de Calor entre o Rio de Janeiro-RJ e a Ilha da Trindade-ES) foi criado com intuito de estudar a circulação na região oceânica ao sul da Cadeia Submarina de Vitória-Trindade. A amostragem periódica na área é possível graças ao uso de navios de oportunidade para lançar batitermógrafos descartáveis (XBT).
Situation: in Progress; *Nature:* Research.

2017 - 2020 Ondas Internas e Sólitons na Região da Foz do Rio Amazonas

Description: Apesar de ser uma região oceanograficamente importante, a Foz do Amazonas e a plataforma continental adjacente ainda encontram-se pouco estudadas. Ao largo da Foz do Rio Amazonas, Ondas Internas (OIs), Marés Internas (MIs) e frentes são observadas desde meados dos anos 90 por fotografias aéreas tiradas a bordo de estações espaciais e de imagens de satélites operando tanto na faixa do espectro visível como no de micro-ondas. Essas observações apontam para a importância relativa dessas feições na dinâmica da região, com aplicações na indústria de extração de óleo e gás, na produção primária, no transporte de larvas e sedimentos, bem como nos modelos de circulação oceânica. O escopo desta proposta consiste em utilizar dados derivados de sensores imageadores que atuam na faixa do espectro de energia eletromagnética das micro-ondas, complementados por imagens na faixa do visível em condição de sunglint, dados altimétricos e simulações numéricas para investigar a presença e o comportamento de OIs e de MIs na região da Foz do Rio Amazonas e ao largo. Os resultados deste projeto poderão ser usados em campos multidisciplinares da Oceanografia, onde as ondas internas e marés internas são reconhecidas por sua importância, bem como no fornecimento de informações necessárias para estudos numéricos de processos biogeofísico-químicos em sub e meso escalas.
Situation: in Progress; *Nature:* Research.

2014 - 2015 Fluxos da Corrente do Brasil e da Corrente de Contorno Intermediária nos canais da Cadeia Vitória-Trindade

Description: Public call MCTI SEPED CMA No 1, 9 of december of 2014, Hydro Oceanographic Vessel Cruzeiro do Sul: This project aims to continue and expand the scope of a series of studies in the Vitória Trindade Ridge region, within the framework of INCT in Marine Sciences of.
Situation: Concluded; *Nature:* Research.

2014 - 2020 Estudo da maré interna e seu impacto na mistura vertical e na biomassa fitoplanctônica na região da Ilha de Trindade e montes submarinos da Cadeia Vitória-Trindade

Description: Description: Public Call MCTI/CNPq/FNDCTAção Transversal/CTAquaviário no. 62/2013 - Research and Development on Oceanic Islands: This project proposes the study internal tide in the oceanic region adjacent to the Trindade and Martin Vaz islands and in the seamounts of Vitória-Trindade Ridge, an important ridge of volcanic mountains, which extends to approximately 1200 km from the continental coast of the Espírito Santo State - Brazil. The region has considerable fish stocks due to high primary productivity related to seamounts. Studies indicate that, in oceanic regions marked by the presence of submarine chains, the phenomenon of internal tide may be the main mechanism of vertical mixing and ascension of nutrient-rich subsurface waters, affecting Phytoplankton biomass and primary productivity in the region. Although numerical results indicate the occurrence of internal tides

in Trindade Island and in the mountains of the chain, there are no observational measurements and studies dedicated to investigating the characteristics, distribution and biological implications associated with the process in the region. In this project, oceanographic mooring line will be launched on Trindade Island and the Submarine Vitória Seamount to investigate the internal tides. Also, will be realized cruises for oceanographic measurements along the ridge. The study will also use numerical modeling and remote sensing to investigate the internal tide at different spatial and temporal scales and their biological implications.
Situation: in Progress; *Nature:* Research.

2011 - 2012 Desenvolvimento de equipamentos para simulações da dinâmica de escoamentos geofísicos

Description: The aim of this project is to develop a national (Brazil) construction of a rotating table to perform laboratory experiments of geophysical fluid dynamics, such as Taylor column, Ekman layer, intensification of western boundary currents, planetary waves, internal waves, etc. These experiments simulate under controlled conditions the dynamics of atmospheric and oceanic processes in which the Earth rotation, via the Coriolis accelerations, plays an important role. For didactic support purpose, this rotating table will be built using basic low cost components available at the Brazilian market, easily affordable to universities and research institutes.
Situation: Concluded; *Nature:* Research.

2011 - 2018 INCT Instituto Nacional de Ciência e Tecnologia em Ciências do Mar de Estudos dos Processos Oceanográficos

Description: Multi-institutional cooperation project, whose mission is to contribute to the understanding of the oceanographic processes of the Brazilian Continental Margin in an integrated way, in different spatial and temporal scales; The training of human resources in the areas of Marine Sciences from basic education to postdoctoral level; And the transfer of scientific knowledge to entrepreneurs and society in order to formulate public policies for the preservation and sustainable use of the natural resources of this oceanic region. As a general objective, this INCT will establish conceptual models for the understanding of oceanographic processes of interaction between the ocean and the continental shelf, at different spatial and temporal scales; Identify and quantify the flows and the exchange of properties between different compartments of the system; To address its effects on biodiversity and the influence of global changes induced by natural and man-made factors and their impacts on society. The project covers more than 30 research institutions and about 120 researchers.
Situation: in Progress; *Nature:* Research.

2006 - 2018 Oceanographic Modeling and Observation Network (REMO)

Description: REMO (http://www.rederemo.org/html/index.php/welcome) is a Brazilian effort in physical oceanography and operational oceanography conducted by a group of researchers, technicians and students associated with universities, research centers and the Brazilian Navy, funded by Petrobras and the National Agency of Petroleum, Natural Gas and Biofuels (ANP). Today, REMO's members are the Federal University of Rio de Janeiro (UFRJ), the Federal University of Bahia (UFBA), the Brazilian Navy Navy Hydrographic Center (CHM) and the Centre for Research and Development Leopoldo Miguez de Mello by Petrobras (CENPES). From 2007 until 2011, the Federal University of Rio Grande (FURG), University of São Paulo (USP) and the Institute of Marine Studies Admiral Paulo Moreira (IEAPM) were also REMO's members.

The general goal of REMO is the development of science and technology in physical oceanography, ocean modeling, observational oceanography and operational oceanography. The specific aims are: (i) to improve the understanding of the meso- and large-scale circulation and of the intraseasonal to interannual variability of the South Atlantic; (ii) to produce short-range ocean forecasts and to improve predicatibility; (iii) to develop ocean data assimilation mÃ©todos; and (iv) to produce high-quality oceanographic information to support activities of the oil industry, of the Brazilian Navy, and of other sectors that demand oceanographic information.
Situation: in Progress; *Nature:* Research.

OTHER RELEVANT INFORMATION:

Approved in the public selection process for an Adjunct Professor A, MS-197 sector Coastal and Oceanographic Engineering, of the Ocean Engineering Program at COPPE/UFRJ, as per Public notice nº860, of December 20, 2017, Diário Oficial da União, nº247, December 27, 2017, consolidated with the amendments to Public notice nº13, January 8, 2018 and Public notice nº29, January 16, 2018.

Date: May 23, 2024   Signature: