**Yonss JOSE-ESTIVAL | Postdoctoral Researcher**
**Alfred-Weber-Institut, Lehrstuhl für Umweltökonomik, Heidelberg, Germany**
**GEOMAR - Helmholtz Centre for Ocean Research Kiel, Germany**

## Field of interest

My actual research is focused on improving our understanding of the key processes determining the coastal and offshore biogeochemical dynamics, productivity and marine environmental conditions. My interest during this task was, among other subjects, on nitrogen cycling and oxygen distribution, and how they are influenced by ocean circulation and benthic dynamics. I'm also interested in understanding the role of higher trophic levels on biogeochemical cycling and how it evolve with changing in environmental conditions.

## Core Skills

- Database management
- Data warehouse
- Programming and statistical analysis
- Data analysis and visualisation
- Data modelling
- Ocean dynamic modelling
- Physical and biogeochemical oceanography
- Supervision of PhD students
- Language skills (fluent in Portuguese, French and English)
- Experience in oral and written communication (conferences, scientific articles, funding projects proposals, …)

## Career Summary

**Postdoctoral Researcher** (2020-present)

Alfred-Weber-Institut, Lehrstuhl für Umweltökonomik, Heidelberg, Germany

*Investigate the impact of climate change on the dynamics of the temperature front and its role in organic production in the Mozambique Channel*

**Key Responsibilities**

- Implementation of biogeochemical and ecosystem models
- Assist in engaging stakeholders and disseminating marine sustainability knowledge and solutions

## Education

**PhD., Physical oceanography**
University of Cape Town, South Africa

**MSc., Physical, chemical and biological oceanography**
University of the Mediterranean Aix-Marseille II, France

**BSc. Physical oceanography**
Eduardo Mondlane University, Mozambique

## Languages

**Portuguese, English, French Bitonga* and Changana*** (fluent,*Native Mozambican language), **Italian** (basic), **German** (Elementary)

## Software and computing skills

**Softwares**

Oracle, MySQL, Power BI, MicroStrategy, Pentaho, Data integration, Pivot4 J, WebPivotTable, Visual Paradigm, Lucidchart, pack office, Github, GitLab

**Programming languages**

Matlab, Fortran, Python, SQL, R, shell scripting and bash scripting

- Processing and analysis of oceanographic data
- Participation in the implementation of oceanographic campaigns

### **Postdoctoral Researcher** (2014-present)

GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

*Understand the dynamics of the Tropical South Eastern Pacific Ocean ecosystem*

**Key Responsibilities**

- Implementation of physical, biogeochemical and ecosystem models
- Responsible for the definition of the IT environment for modelers
- Processing and analysis oceanographic and meteorological models, observational and remote sensing data
- Participation in the implementation of oceanographic campaigns
- Creation of an observation database for model validation
- Co-advisor of PhD students
- Writing of multidisciplinary research project proposals (scientific objectives, estimation of human and material needs, cost estimates and planning of realisations)

### **PhD. candidate** (2010-2014)

Physical Oceanography department, University of Cape Town, South Africa

*Understand the mesoscale structuring of the pelagic ecosystem in the Mozambique Channel*

**Key Responsibilities**

- Implementation of physical and biogeochemical ocean models
- Processing and analysis of oceanographic data from models and remote sensing
- Thesis and paper's writing

### **Master's internship** (01-06/2009)

Research Institute for Development (IRD), Brest, France

*Understand the hydrodynamic circulation of the Quirimbas archipelago - Northern Mozambique Channel*

**Key Responsibilities**

- Implementation of physical and biogeochemical ocean models
- Processing and analysis of models and remote sensing oceanographic data

### **Operating system**

Linux, Mac OS, Windows

### **Ocean system models**

ROMS[1], PISCES[2], BioEBUS[2] ([1]Circulation and [2]biogeochemistry models)

## **Granted project proposal**

BELMONT Forum: ***Managing Ocean Front Ecosystems for Climate Change***. https://www.belmontforum.org/projects/managing-ocean-front-ecosystems-for-climate-change/

SFB 754: ***Quantifying sinking fluxes of particles, POC and Fe in the Peruvian OMZ.*** https://www.sfb754.de/mini-proposals

HLRN Compute Project: **The OMZ off Peru - Modelling the Eastern Tropical South Pacific oxygen minimum zone.** https://support.hlrn.de/home/view/Service/Projects

HLRN Compute Project: **Food web dynamics off Peru - Modelling the ecosystem dynamics of the Eastern Tropic-South Pacific.** https://support.hlrn.de/home/view/Service/Projects

IRD JEAI-MOCAs: ***Modelling coastal processes in Mozambican Coast.*** https://www.documentation.ird.fr/hor/fdi:010061344

## **Teaching** (2006-2007)

School of Marine and Coastal Sciences, Quelimane, Mozambique

**Key Responsibilities**

- Responsible for lectures and tutorials in marine science
- Participation in oceanographic campaigns in the estuary of the Bons Sinais river

## **Bsc. Internship** (2005-2006)

School of Marine and Coastal Sciences, Quelimane, Mozambique

*Studying the influence of turbulence in the culture of microalgae*

**Key Responsibilities**

- Design and implementation of experiments to optimise the development of microalgae in closed tanks.

## Certification

**R programming**

**Data Scientist's toolbox**

Online course by Johns-Hopkins University on the Coursera platform

**Analyze and visualize data with Power BI**

Online courses by Microsoft on the edX platform

**Business intelligence concepts, tools and applications**

**Concepts, design and integration of data warehouse**

**Relational database support for data warehouses**

**The essentials of database management**

Online courses by University of Colorado offered on the Coursera platform

**Business Analytics**

Online courses by University of Pennsylvania offered on the Coursera platform

## Scholarship

Bsc. **French** scholarships for foreign students

MSc. **French** scholarships for foreign students

PhD. **IRD** (*Institut de Recherche pour le Développement*)

## Co-advisor of a PhD students project

- Modelling of air-sea exchanges of bromoforms in the Indonesian region
- Modelling of the dynamics of high trophic levels in the tropical South-Eastern Pacific Ocean

## Hobbies

Swimming, hiking, reading, painting

## Recent publications and communications

### Peer-Reviewed publications

Hauschildt, J., Thomsen, S., Echevin, E., Oschlies, A., **José Y.S.**, et al., (2020). *The fate of upwelled nitrate off Peru shaped by submesoscale filaments and fronts*, Biogeosciences Discuss, https://doi.org/10.5194/bg-2020-112, in review

**José Y.S** et al., (2019). *ENSO-driven fluctuations in oxygen supply and vertical extent of oxygen-poor waters in the oxygen minimum zone of the Eastern Tropical South Pacific*, Biogeosciences Discuss, https://doi.org/10.5194/bg-2019-155, in review

**José Y.S** et al., (2017). *Linking diverse nutrient patterns to different water masses within anticyclonic eddies in the upwelling system off Peru*. Biogeosciences, doi:10.5194/bf-14-1349-2017

**José Y.S** et al., (2016). *Suppressing and enhancing effects of mesoscale dynamics on biological pro- duction in the Mozambique Channel.* Journal of Marine Systems, doi:10.1016/j.jmarsys.2016.02.003

**José Y.S** et al., (2014). *Influence of mesoscale eddies on biological production in the Mozambique Channel: Several contrasted examples from a coupled ocean-biogeochemistry Model.* Deep Sea Research II, doi:10.1016/j.dsr2.2013.10.018

Halo I. et al., (2013). JEAI-MOCAs: *A multi-institutional initiative to build marine research capacity in Mozambique.* S. Afr. j. sci. vol.109 n.7-8 Pretoria Jan. 2013, South African Journal of Science

### Conferences oral and poster presentations

**José Y.S** et al. (2018). *ENSO-driven fluctuations in the vertical extent of oxygen-poor waters in the oxygen minimum zone of the Eastern Tropical South Pacific* (**Oral presentation**). Ocean deoxygenation conference, Kiel, Germany

**José Y.S** et al. (2018). *Understanding the linkage between water column oxygen and benthic fluxes in the upwelling system off Peru* (**Poster presentation**). Ocean deoxygenation conference, Kiel, Germany.

**José Y.S** et al. (2016). *Source of nutrients within mesoscale eddies in the upwelling system off Peru* (**Poster presentation**). Liège Colloquium, Liège, Belgium

**José Y.S** and A. Oschlies (2015). *Variability of the Oxygen Minimum Zone in the Eastern Tropical South Pacific: Role of Mesoscale Dynamics* (**Poster presentation**). AGU Fall Meeting, USA

**José Y.S** and A. Oschlies (2015). *Role of non-linear dynamics on the ventilation of the oxygen minimum zone in the eastern tropical south Pacific* (**Poster presentation**). EGU, Vienna, Austria

**José Y.S** and A. Oschlies (2015). *An insight into the variability of the oxygen minimum zone in the Eastern Tropical South Pacific: the role of mesoscale dynamics* (**Poster presentation**). SOLAS, Kiel, Germany

**José Y.S** et al. (2013). *Mesoscale eddies-induced biogeochemical dynamics* (**Poster presentation**). The EOC hot topics conference, *Spain*.

### Seminars

**José Y.S** and A. Oschlies (2015). *Mechanism controlling the dynamics of the oxygen minimum zone of the Eastern Tropical South Pacific: role of mesoscale dynamics* (**Oral presentation**). LOCEAN, France and UCT, South Africa.

**José Y.S** and A. Oschlies (2017). *Benthic dynamics: a sink of water column fixed nitrogen in the coastal region off Peru,* (**Oral presentation**). LEGOS, France

**José Y.S** et al. (2016). *Nutrient and oxygen dynamics in Oxygen Minimum Zones (OMZs): From small to global scales*. (**Poster presentation**). Scientific Advisory Board, GEOMAR, Germany.

**José Y.S** (2015). *Mozambique Channel ecosystem: New insights and perspectives* (**Oral presentation**) - JEAI MOCA meeting*, Cape Town, South Africa.*