

SOUTH-WESTERN ATLANTIC REGION OBSERVATIONS: WHERE ARE WE NOW?

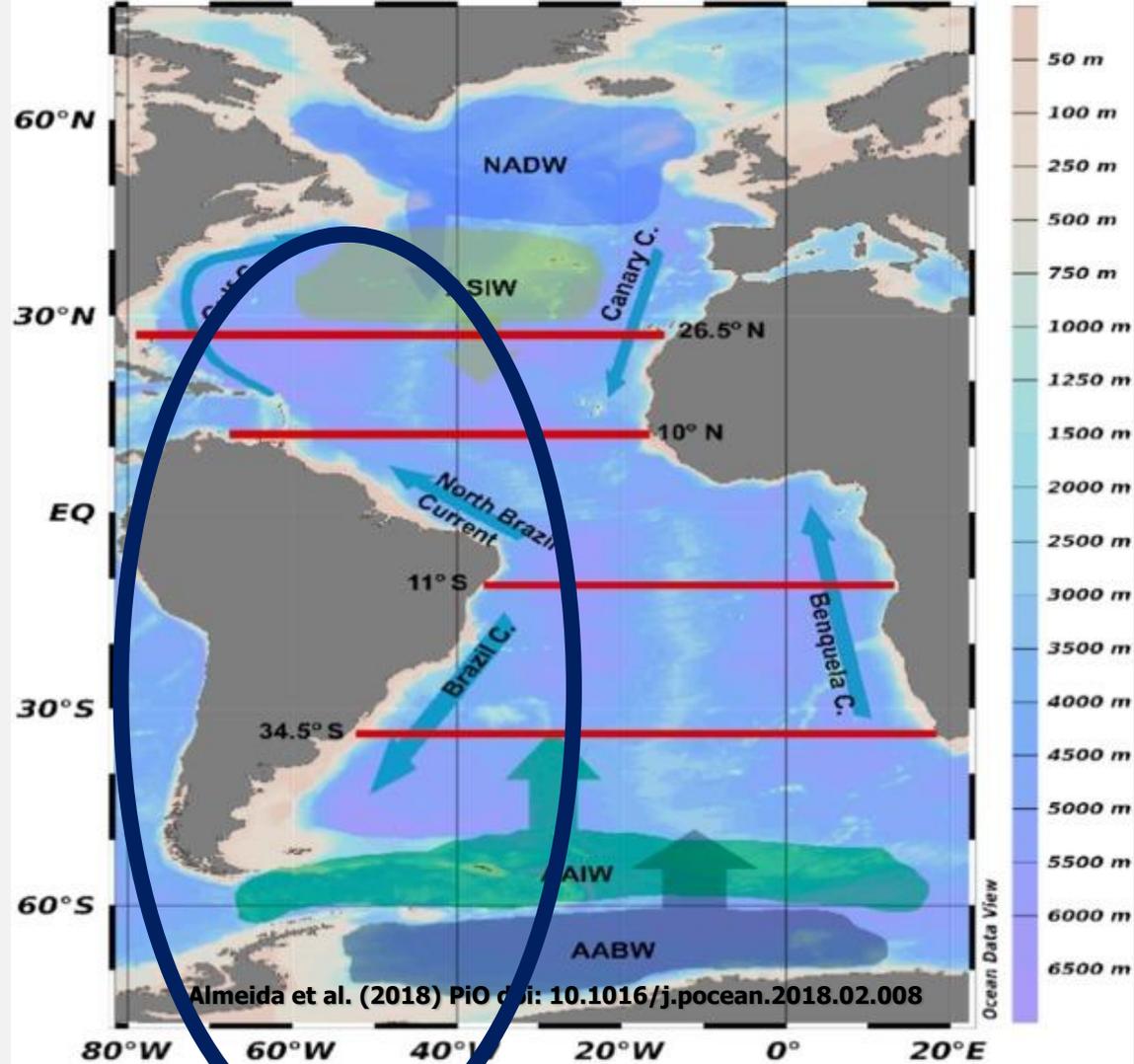
Leticia Cotrim da Cunha, UERJ/BrOA/Rede Clima/Brazil

**With the collaboration of PIRATA-BR team,
BrOA team, SAMBAR/USP team, R. Kerr & GOAL (FURG),
Chem. Ocean. Lab team (UERJ), LabCULT team (UERJ)
ICTP, Trieste, 15th August 2022**



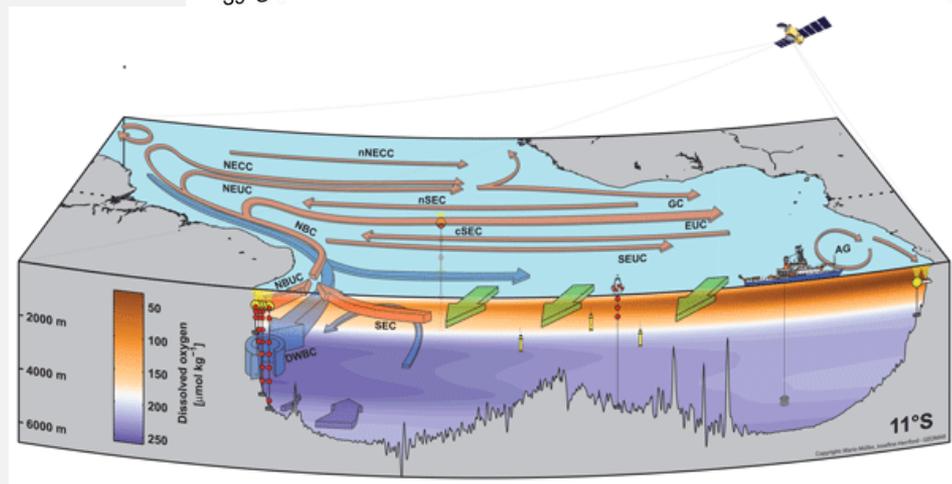
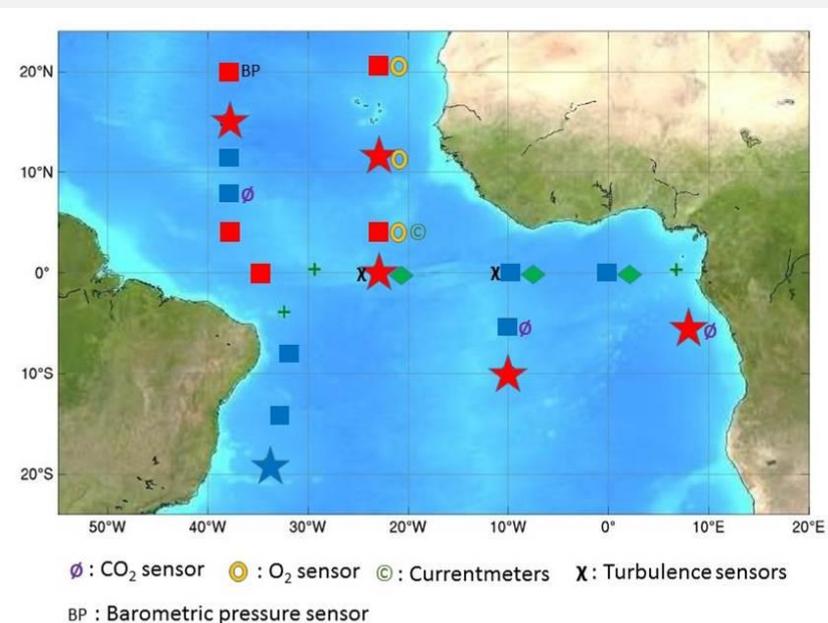
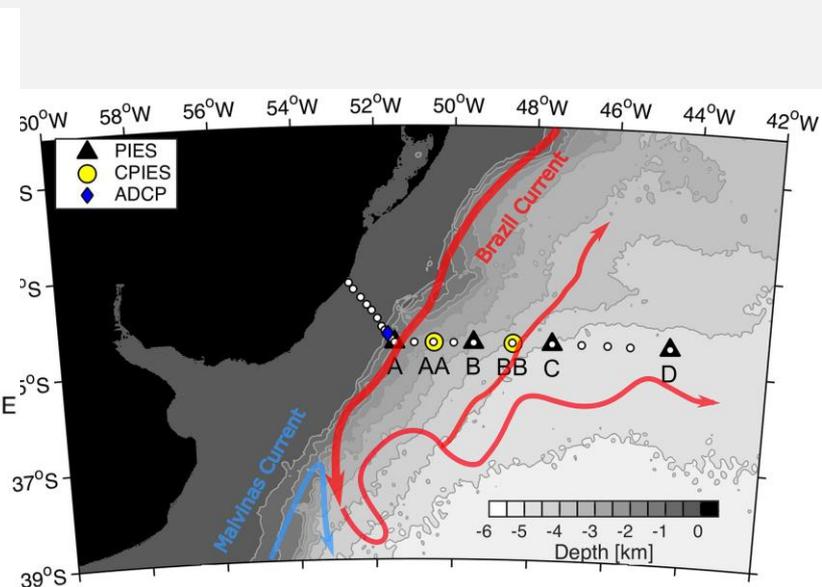
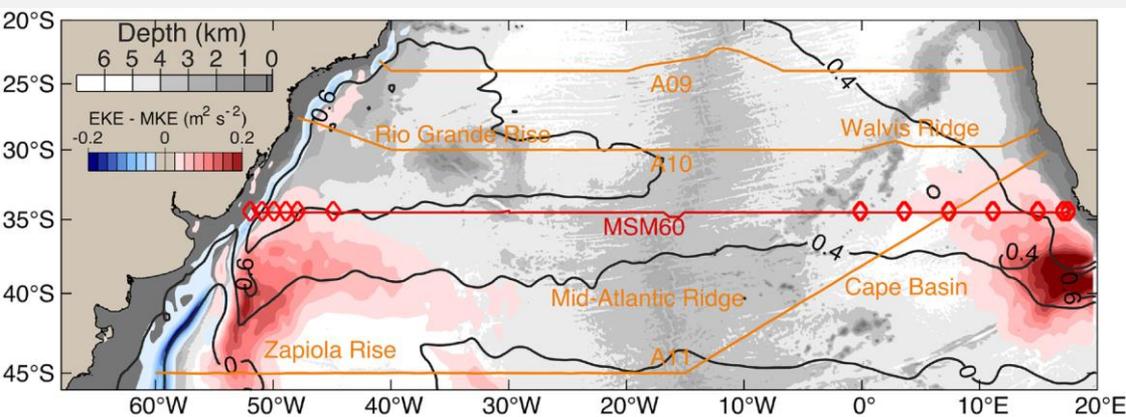
TOPICS

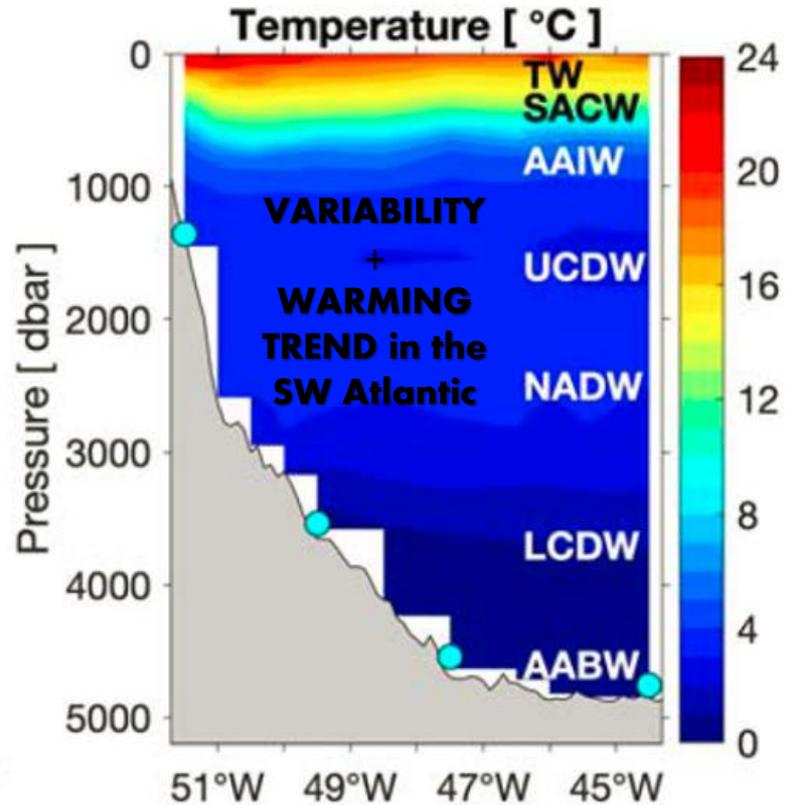
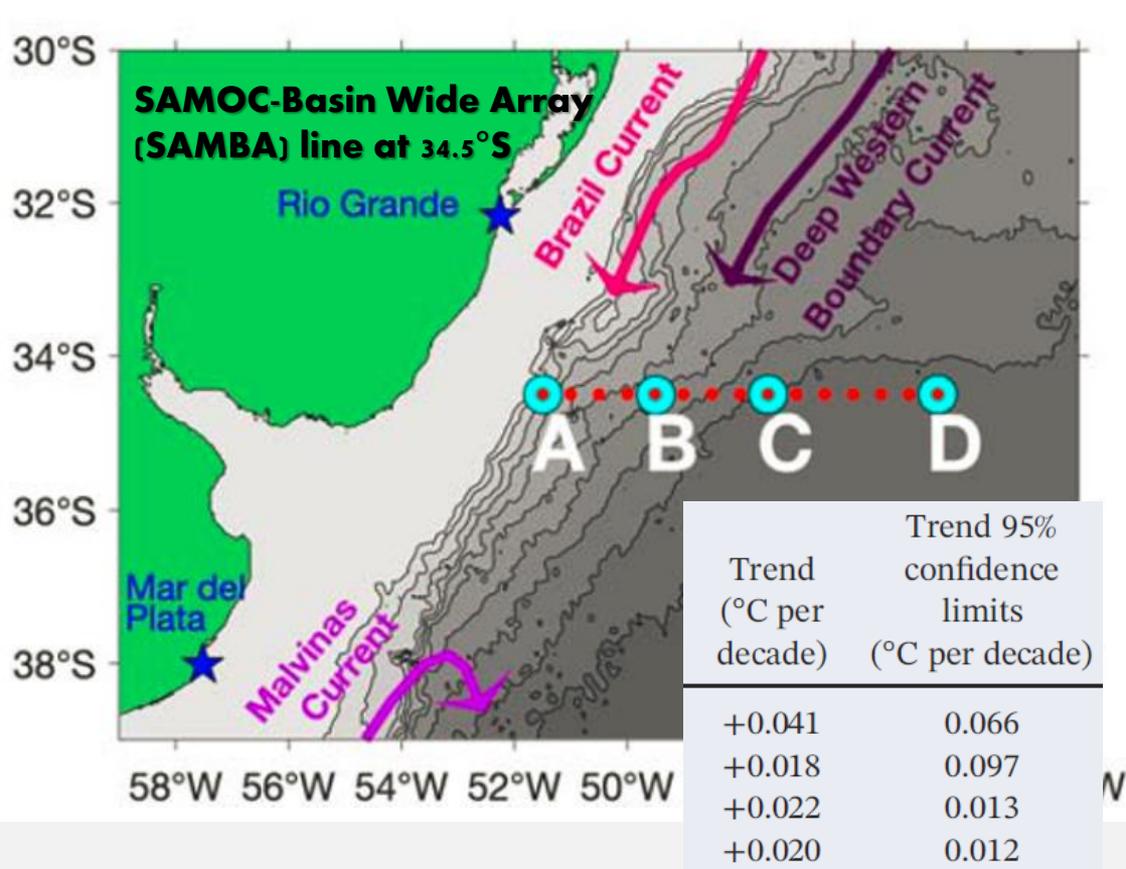
- **Rationale**
- **Ocean observations = new knowledge**
- **Main challenges**



Almeida et al. (2018) PiO doi: 10.1016/j.pocan.2018.02.008

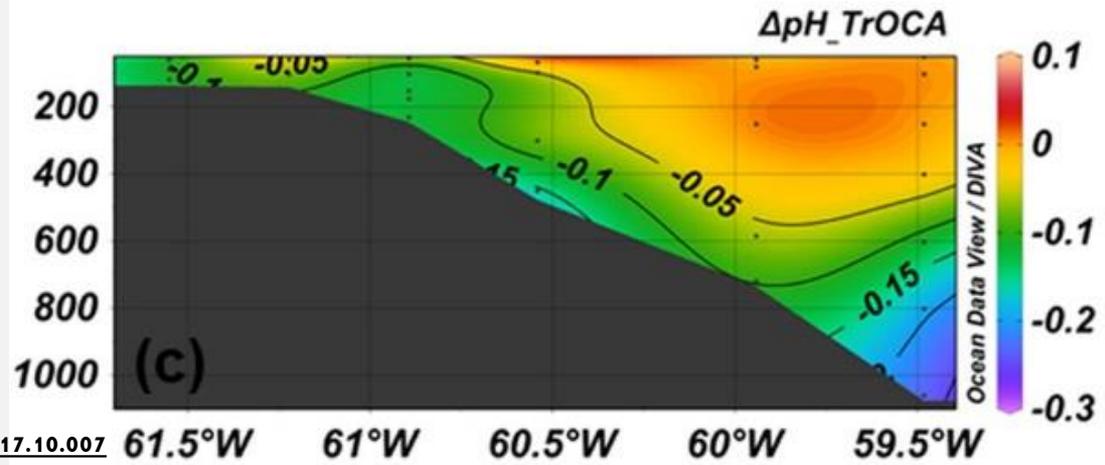
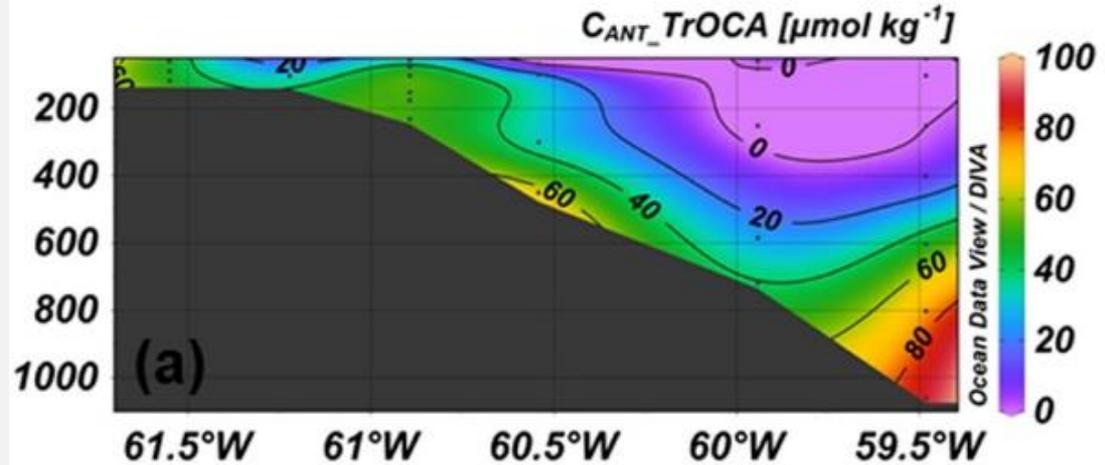
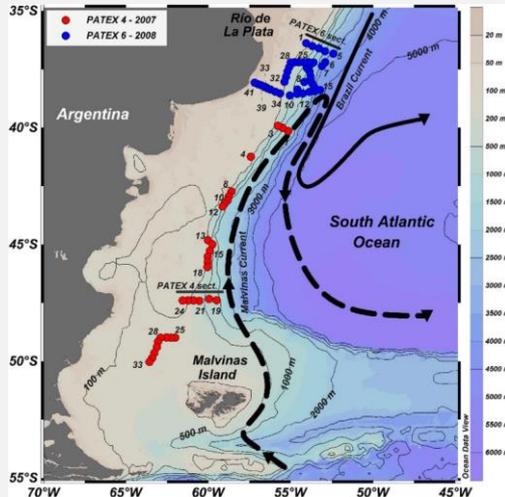
- **“Highway” for the Atlantic Meridional Overturning Circulation (AMOC)**
- **Receives ~20-25% global river water discharge**
- **South Atlantic gyre, Agulhas leakage, upwelling**
- **Latitude extension: from the tropics to sub-polar regions**





Patagonian shelf:

- key area for anthropogenic CO₂ uptake;
- SACW is acidifying faster;
- AAIW is under risk for aragonite undersaturation

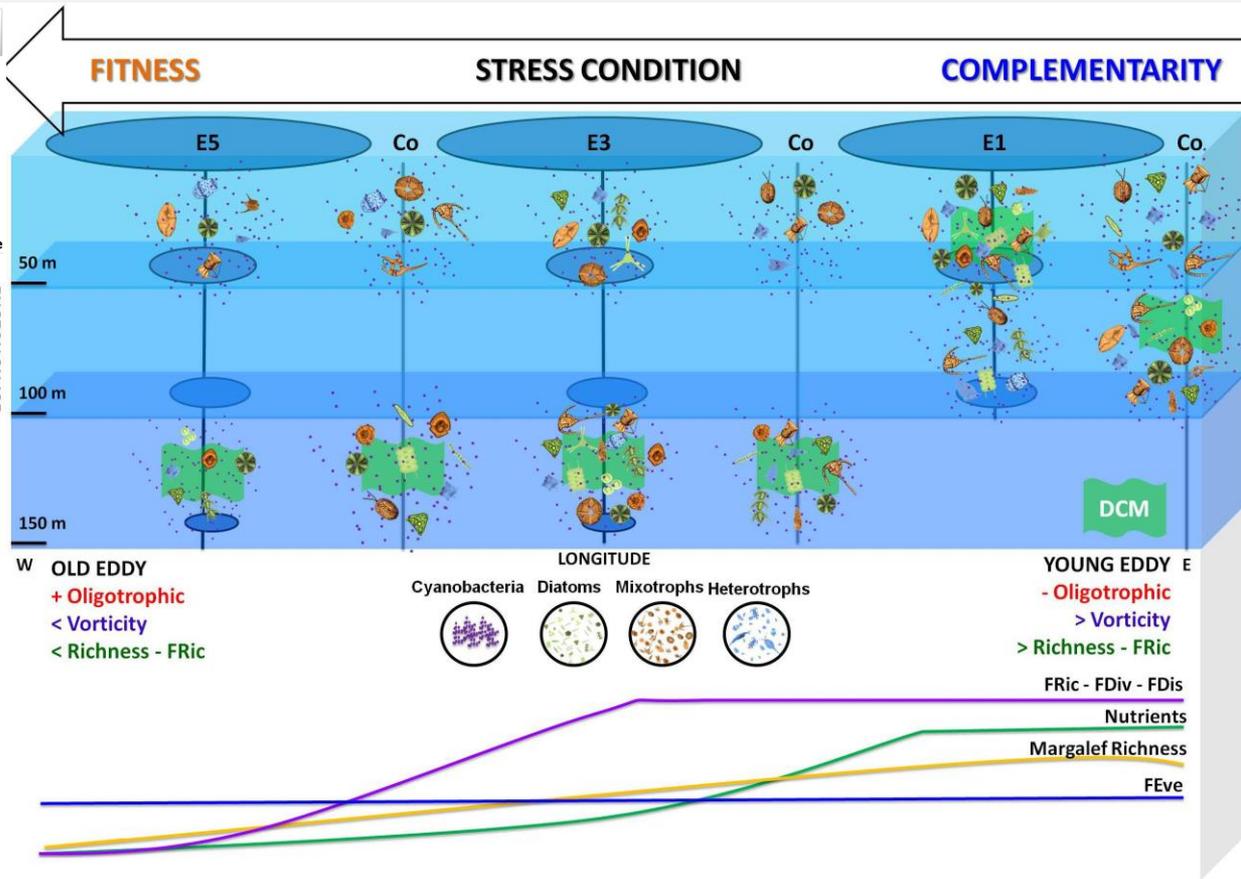
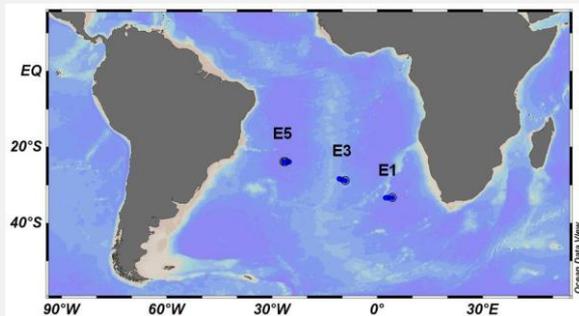




Is Oligotrophy an Equalizing Factor Driving Microplankton Species Functional Diversity Within Agulhas Rings?

Caio Cesar-Ribeiro^{1,2*}, Fernanda R. Piedras^{1,2}, Leticia C. da Cunha^{1,3,4,5}, Doménica T. de Lima^{1,2}, Luana Q. Pinho³ and Gleyci A. O. Moser^{1,2}

Plankton functional strategy within Agulhas eddies: Best use of any source of nutrients or evolutionary advantages (e.g. mixotrophy) to live in oligotrophic conditions





UN DECADE OF OCEAN SCIENCE

- **Galway statement**
- **Belém Statement**
- **UN 2030 Agenda**
- **All-Atlantic initiative**
- **AtlantOS Program**

ACTORS AND STAKEHOLDERS

- **Port authorities, offshore energy companies, ships of opportunity (SOOPs)**
- **Continuous and autonomous measurement systems connected to databases**
- **World Bank ProBlue, funds, foundations as investors**
- **Economy: how much a sustainable use of the Atlantic would help reducing present costs?**



AANCHOR PILOT ACTION PROPOSAL:

AA-COASTNET: All Atlantic COASTal observing and technology NETWORK

A network dedicated to
Marine Coastal Observations
with the countries part of the Belem and Galway Statements



BRAZIL

- SIMCosta: Brazilian Coastal Monitoring System
- PNBoia: The National Buoy Program
- MePro initiative: Best Practices in Ocean Observations

ARGENTINA

- EMAC low-cost buoys and stations monitoring network

SOUTH AFRICA

- SMCRI: Shallow Marine and Coastal Research Infrastructure
- SAIAB: South African Institute for Aquatic Biodiversity

WEST AFRICA

- PROP AO: Coastal sea Surface temperature network

CARBO VERDE

- CVOO: Cabo Verde Ocean Observatory
- OSCM infrastructure: Ocean Science Center of Mindelo

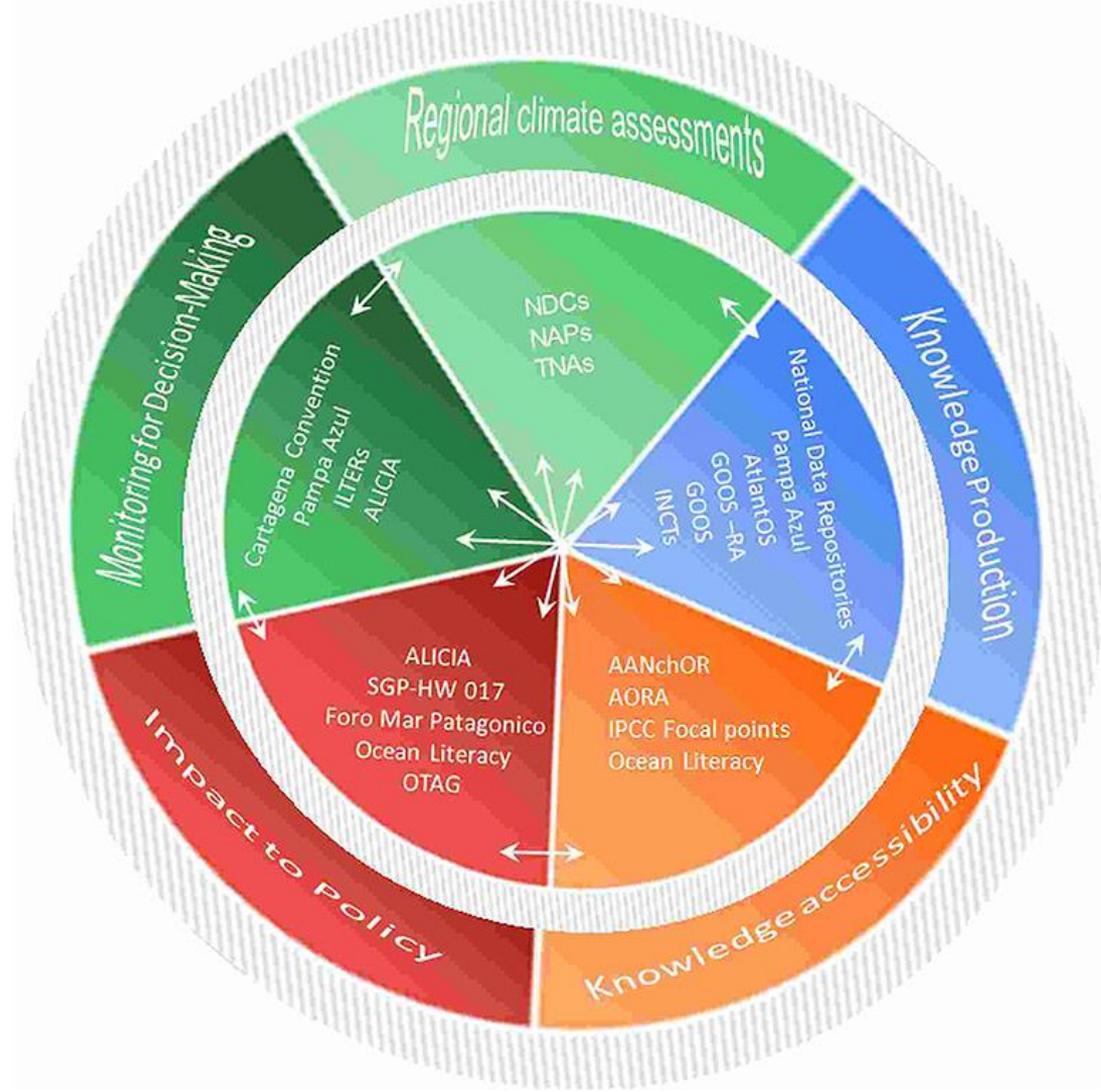
EUROPE

- JERICOR-RI: Joint European Research Infrastructure for Coastal Observations

And as advisory entities:

- AtlantOS (EU, Trans-Atlantic)
- Alliance for coastal technologies (US)
- Ocean Network Canada (Canada)
- CoastsPredict.org





EXAMPLES OF CURRENT INITIATIVES IN LATIN AMERICA:

OCEAN OBSERVATIONS TOWARDS SCIENCE-BASED POLITICAL DECISION MAKING

PERSPECTIVE article

Front. Clim., 01 November 2021
 Sec. Predictions and Projections
<https://doi.org/10.3389/fclim.2021.748344>

This article is part of the Research Topic
 Knowledge Gaps from the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate and Recent Advances
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The Ocean and Cryosphere in a Changing Climate in Latin America: Knowledge Gaps and the Urgency to Translate Science Into Action

Mónica M. C. Muelbert^{1,2*},
 Margareth Copertino^{2,3},
 Leticia Cotrim da Cunha
^{3,4} Mirtha Noemi Lewis^{5,6,7},
 Andrei Polejack^{8,9},
 Angelina del Carmen Peña-Puch¹⁰ and
 Evelia Rivera-Arriaga¹⁰

MAIN CHALLENGES

- **Equalize observation capacity, resources, personnel, good practices**
- **Regional adaptation**

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Downside up: Science matters equally to the Global South

[Regina R. Rodrigues](#) 

[Communications Earth & Environment](#) **2**, Article number: 100 (2021) | [Cite this article](#)

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In a world where humans can push the climate system out of kilter, climate scientists must come from, consider and work for societies around the world.

