

## Atlantic Region Panel

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### Panel overview

The CLIVAR Atlantic Regional Panel (ARP) is a part of the CLIVAR organization. The panel is in charge of implementing the CLIVAR science plan in the Atlantic sector. During the last 15 years, the primary function of the panel has been to promote, recommend and oversee the implementation of observational systems in the Atlantic Ocean sector and major research initiatives on Atlantic climate variability and predictability. The ARP works in close collaborations with other CLIVAR panels, regional and global programs. Achievements over the last two years include furthering and promoting the international EUREC4A/ATOMIC project in the tropical western Atlantic and sustaining international collaboration and focus on AMOC science and infrastructure. Current science foci of the panel can be summarized as: Atlantic meridional circulation; coastal sea level change; and air-sea interaction from the high-latitudes to the Tropics. In the following we highlight accomplishments made by the CLIVAR international community within the Atlantic Ocean since 2020 with more detail.

### Achievements for 2020-2021

- **Workshops**

The CLIVAR AMOC Task Team kicked off in April 2021. Plans were begun for a workshop on optimising the observing system, but went on hold while ARP and AMOC Task Team members were preparing bids to a Horizon Europe call on the AMOC (see below).

WCRP-CLIVAR Workshop on Climate Interactions among the Tropical Basins, Wednesday, February 24, 2021 to Friday, February 26, 2021; see <https://www.clivar.org/events/wcrp-clivar-workshop-climate-interactions-among-tropical-basins-online> for more detail

- **Scientific results from activities**

The Tropical Atlantic Ocean Observing System (TAOS) Review Report was published [online](#) in May 2021. <https://doi.org/10.36071/clivar.rp.1.2021>

CLIVAR Exchanges Special Issue: WCRP-CLIVAR Workshop on Climate Interactions among the Tropical Basins, published July 2021. Guest-edited by Ingo Richter and Noel Keenlyside. <https://doi.org/10.36071/clivar.80.2021>

ATOMIC/EUREC4A data publications within the Copernicus ESSD Special Issue  
[https://essd.copernicus.org/articles/special\\_issue1122.html](https://essd.copernicus.org/articles/special_issue1122.html)

An Eastern Boundary Upwelling Systems (EBUS) manuscript under active preparation, with the leading authors meeting every 2 weeks. The aim is to share with larger authorship list by late January, 2022.

- ***Scientific capacity building and career support***

The ARP 2021 budget request was for printing of hard copies of the Tropical Atlantic Observing System (TAOS) review, to be sent to stakeholders about the Atlantic basin, primarily from developing countries

- ***Knowledge exchange***

AGU 2020 and 2021 annual meeting session on the Trade-winds region, motivated by ATOMIC/EUREC<sup>4</sup>A. This session is expected to recur annually.

An ATOMIC data workshop, August, 2020, along with intermittent ATOMIC and EUREC<sup>4</sup>A wide telecons.

A presentation on Lighthouse Activities by Regina Rodrigues in summer 2020, spurring mapping of ARP activities upon the LHAs.

AtlantOS obtained project status within GOOS and GEO Blue Planet, contributed to the All Atlantic 2021 meeting, has opened a [call for new members](#) of the Steering Committee, and has worked to stimulate the task teams within the program.

6 & 15 April 2021: South Atlantic Meridional Overturning Circulation (SAMOC) Logistics Meeting (Virtual) on 6 and 15 April, 2021. The workshop included a brief introduction to the recently formed CLIVAR AMOC Task Team.  
[https://www.aoml.noaa.gov/phod/SAMOC\\_international/documents/SAMOC\\_IX\\_Workshop\\_Report.pdf](https://www.aoml.noaa.gov/phod/SAMOC_international/documents/SAMOC_IX_Workshop_Report.pdf)

Participation (by Susan Bates) on the organizing committee for the East Coast Coastal Solutions Workshop in July 2020 (<https://www.oceanvisions.org/coastal-solutions-2020>)

## **Plans for 2022 and beyond**

A placeholder is still being held for an in-person [CLIVAR-FIO Summer School on Ocean Macroturbulence and Its Role in Earth's Climate](#), to be held in Qingdao, China, from 19-25 June, 2022. The realism of this will be assessed in early 2022.

Greg Foltz will lead an observation sub-group that emanated from the Tropical Basins Interaction workshop

**Field campaigns:** Arctic and sub-Arctic atmospheric aircraft field campaigns are either in progress (German AC3, UK Arctic Cold-Air Outbreaks (ACAO)), being planned (NASA ARCSIX) or currently under review (NSF CAESAR (Cold Air outbreaks in the Sub-Arctic Region)). These will take place spring 2022, spring 2023 or summer 2024 depending on the campaign, from either Sweden or Greenland. Their focus, broadly, is Arctic-mid-latitude air mass exchanges and the surface energy budget.

**AMOC activities (ongoing and new):**

There was strong participation by ARP members in the recent Horizon Europe funding call (due Oct 6) on the AMOC. The call was entitled HORIZON-CL6-2021-CLIMATE-01-03: Key oceanic and polar processes driving regional & global climate change, with part a on the AMOC and part b on the Southern Ocean. At least 3 bids were submitted with participation from different ARP and AMOC Task Team members on all bids. The specifics of the call also align with the Terms of Reference in the CLIVAR AMOC Task Team, and so the Task Team will endeavour to work with the successful bid in implementing the ToR (cost-effective sustained AMOC observations). Decisions are anticipated in March 2022 with the successful project starting in summer 2022.

There is the potential development of an AMOC tipping points workshop (Laura Jackson, ARP and CLIVAR AMOC Task Team), which would additionally align with the Horizon Europe call.

2019-2023 ARP members have continued involvement in iAtlantic & TRIATLAS sister projects (H2020, Blue Growth) in the Atlantic and South Atlantic, respectively, as well as other observational programmes in the Atlantic Ocean, such as OSNAP, RAPID, PIRATA, and etc.

A special issue in Nature Communications Earth-Environment is being planned focusing on the South Atlantic, through involvement by Editor and ARP member Regina Rodrigues. Submissions should be done by March 2022. Additionally, a new review paper on the AMOC since 1980 has been accepted (led by Laura Jackson, ARP with participation from ARP members).

**Contributions to wider coordination activities:**

Joint CLIVAR-GOOS Workshop “ [From global to coastal: Cultivating new solutions and partnerships for an enhanced Ocean Observing System in a decade of accelerating change](#)” (CLIVAR panels, OOPC, representatives from developing rim nations). Location: ICTP (Trieste, Italy). New dates proposed: most likely 15-19 August, 2022, depending on the pandemic situation. The Organizing Committee has been meeting regularly during 2020 and 2021. One of the objectives of the workshop is to identify the synergies of interests, needs and challenges of ocean observations by developing countries in different regions. That will also be a good opportunity to share the experiences and lessons learned from TAOS with other regions.

Contribute to the All Atlantic 2022 meeting planned for Washington DC in June 2022.

A proposal is in development for a special CLIVAR Exchanges issue dedicated to advocate the outcomes of the TAOS review in the Q1/Q2 2022. There has been no proper opportunity to advertise this important publication since the report was officially launched in May 2021. It has gathered great efforts from over 50 authors in the past four years. The proposal is being led by Sabrina Speich.

EuroSea and the Ocean Frontier Institute supported the LabSea2022 network, a loose federation of parties, observationalists, modellers and policy makers, with an interest in the Labrador Sea region of the Northwest Atlantic. It is proposed that this group will meet several times beginning in January 2022. It is led by Brad de Young (ARP) and Doug Wallace, with participation of other ARP and AMOC Task Team members.

### **Articles published in 2020/21 as part of panel activities (if any)**

Johns, William, S. Speich, M. Araujo and lead authors, (2021) Tropical Atlantic Observing System (TAOS) Review Report. CLIVAR-01/2021, 218 pp.  
<https://doi.org/10.36071/clivar.rp.1.2021>

Special issue CLIVAR Exchanges on the Tropical Basin Interactions

Meehl, G.A., A. Hu, F. Castruccio, M.H. England, S.C. Bates, G. Danabasoglu, S. McGregor, J.M. Arblaster, S.-P. Xie, and N. Rosenbloom, 2020: Mutually interactive decadal-timescale processes connecting the tropical Atlantic and Pacific, *Nature Geoscience*, doi:10.1038/s41561-020-00669-x.

### **Budget and other needs for 2022 (in CHF)**

We are requesting **10k CHF** with which to support an in-person meeting in 2022. Details are still TBD, we hope to append to an AMOC meeting (we are assuming the macroturbulence summer school hoped for summer 2022 in Qingdao is unlikely).

## Annex A

### Proforma for CLIVAR Panel requests for SSG approval for meetings

***Note: If your group has approved funds in 2021 that were not used because of Covid19 and other unexpected issues, and you propose to use them in 2022, they should be included again in this request, in addition to any new request.***

1. **Panel name:** Atlantic Regional Panel
2. **Title of meeting or workshop:** in-person annual meeting
3. **Proposed venue (Or indicate if online):** UK (append to the AMOC workshop) or Qingdao China (if the macroturbulence summer school takes place, which at this point is not expected)
4. **Proposed dates:** summer 2022
5. **Proposed attendees, including likely number:** 10
6. **Rationale, motivation and justification, including:** relevance to CLIVAR science & WCRP Strategic Plan and Lighthouse Activities, and any cross-panel/research foci links and interactions involved: The ARP has not met in person since 2019. An in-person meeting would help energize the panel we feel.
7. **Specific objectives and key agenda items: The three ARP science foci:** Atlantic Meridional Overturning Circulation; Coastal Sea Level Change; and Air-Sea Interaction from the High-Latitudes to the Tropics.
8. **Anticipated outcomes (deliverables):**
9. **Format:** 1 day, potentially at the end of an AMOC workshop
10. **Science Organizing Committee (if relevant)**
11. **Local Organizing Committee (if relevant)**
12. **Proposed funding sources and anticipated funding requested from WCRP:**  
10K