

## Report to CLIVAR SSG-18

**Panel or Working Group:** Atlantic Panel

### 1. Contributions to developing CLIVAR science and fit, where appropriate, to the CLIVAR imperatives

#### **Seasonal to Decadal Prediction:**

- AIP is planning to increase its role in the coordination of programs to measure and monitor the Atlantic MOC (UK-RAPID, EU-THOR, US-AMOC). The panel is advocating for the implementation of a sustained network for all AMOC components. A number of AMOC-related and other larger projects are currently addressing the emerging science of decadal predictions (e.g. US AMOC, EU-ENSEMBLES, EU-THOR, EU-COMBINE).
- One objective of the “AIP/VAMOS Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical, Miami” was to assess the predictability of tropical Atlantic variability (TAV) at seasonal to decadal time scale. The TAV predictability is currently limited by the presence of a strong SST bias in the south-eastern tropical Atlantic in coupled ocean-atmosphere model simulations. Recent studies suggest moreover the role of weather noise as a potentially disrupting factor for the predictive skill in the tropical Atlantic. Other studies have pointed out the overestimation of the simulated SST-heat flux feedback (more negative in the models than in the observations) as a potential damping source of seasonal to interannual variability.

#### **Monsoons:**

- AIP, together with VAMOS, is looking into coupled feedbacks in the tropical ocean which amplify the original bias from the underlying initial causes. It appears that the Bjerknes feedback (which is weaker in the Atlantic compared to the Pacific) is playing a dominant role in amplifying the equatorial spring biases in models. What is less clear (and seems to vary among models) is the original cause of the westerly wind spring bias. Various atmospheric causes have been suggested from analyses of AMIP type simulations: displacement of the subtropical High's, bias in continental precipitation over the Amazon and West Africa, atmospheric convection over the ocean, stratus cloud representation. There are also suggestions for an oceanic role on the wind bias origin. Particularly the coastal upwelling regions are identified as a region with substantial SST bias even in forced ocean-only simulations. There is a need to better document the different causes which can lead to the equatorial westerly wind bias in the western Atlantic (using both forced and coupled models).

#### **ACC:**

- Panel has been briefed on the activities being developed by the US CLIVAR WG on Hurricanes and it has decided to strengthen links with this group. It will look at CMIP5 simulations and tropical cyclones in a warming climate.

### 2. Cooperation with other WCRP projects, outside bodies (e.g IGBP) and links to applications

#### 3. Workshops/meetings held

- SAMOC III meeting, Rio de Janeiro/Niteroi, Brazil, 11-13 May 2010
- US AMOC meeting, Miami, FL, USA, 7-9 June 2010

- AIP/VAMOS Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical, Miami, FL, USA, 23-25 March 2011
- Atlantic11th AIP meeting, Miami, FL, USA, 25-26 March 2011

**4. New activities being planned, including timeline**

Provide international platform for the scientific coordination of AMOC components. It will seek to bring together PIs of projects involved with the AMOC components in order to identify commonalities and gaps in the system, whilst advocating for a sustained network. Synthesis of data and information is also an activity that the panel is promoting, although it appreciates that it will depend on individual research groups to seek funding and support to perform it.

Participation at the OSC conference

Develop and provide some observed oceanic metrics for the Atlantic and apply them to the CMIP5 data sets when they will become available.

Propose Task Team on Atlantic Tropical Biases to CLIVAR SSG, with interaction to other panels

**5. Workshops/meetings planned (see ANNEX B also)**

- 12<sup>th</sup> AIP meeting, Fall 2012

**6. Issues for the SSG**

## **Annex B**

### **Proforma for CLIVAR Panel and Working Group requests for SSG approval for meetings**

Requests should be made through D/ICPO (Robert.Molinari@noc.soton.ac.uk) against the following headings:

- 1. Panel or Working Group:** Atlantic Panel
- 2. Title of meeting or workshop:** 12th Atlantic Panel meeting
- 3. Proposed venue:** Europe
- 4. Proposed dates:** Fall 2012
- 5. Proposed attendees, including likely number:** Panel members + 5 invitees
- 6. Rationale, motivation and justification, including: relevance to CLIVAR themes & JSC cross cutting topics and any cross-panel/working group links and interactions involved:**
  - Oversee and coordinate programs to measure and monitor ocean-atmosphere variability in the Atlantic sector
- 7. Specific objectives and key agenda items**
  - Coordination of AMOC components
  - Coordination and synthesis of Atlantic-related analysis of the CMIP5 data sets
  - Coordination of tropical Atlantic observation network addressing the southeastern Atlantic model bias issue
- 8. Anticipated outcomes (deliverables):** Panel report
- 9. Format:** 2.5 days
- 10. Science Organising Committee (if relevant):** Laurent Terray and Peter Brandt (panel co-chairs)
- 11. Local Organising Committee (if relevant):** Nico Caltabiano (ICPO)
- 12. Proposed funding sources and anticipated funding requested from WCRP:**  
US\$ 10K