CLIVAR Atlantic Implementation Panel: 7th session

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The 7th session of the CLIVAR Atlantic Implementation Panel (AIP) was held in Venice, ITALY on 20-21 October 2005. The panel meeting followed the 3-day CLIVAR workshop on Tropical Atlantic Ocean Dynamics (http://www.clivar.org/organization/atlantic/wksp_trop_atl.htm) co-sponsored by NOAA. This gave the opportunity to focus on the Tropical Atlantic Variability research area. Important issues related to the Atlantic tropical-extratropical teleconnections as well as the key regions and processes involved were revisited. Such teleconnections were related to events like the European heat wave in 2003 and influence the seasonal to decadal forcing of the NAO and related atmospheric regimes in early winter, and therfore mid-to-high latitude climate. They also represent a source of potential predictability (warm/cold sea surface temperatures, impact on diabatic heating etc) under ENSO forcing influence.

Several activities in the Tropical Atlantic are planned and/or funded:

- AMI, Atlantic Marine ITCZ (July-Sept 2007) aiming at improving representation of convective clouds and meridional circulation in the Atlantic marine ITCZ
- AMMA, African Monsoon Multidisciplinary Analysis (2006-2008) focused on the dynamics of the West African Monsoon from weather to climate time scale. It has a large land component, but also ocean needs
- TACE, Tropical Atlantic Climate Experiment (2007-2012) aiming at improving predictions of SST in the tropical Atlantic. Enhanced observations are planned that will help to define sustained observations needed for predictions

The PIRATA array, as the main permanent observation program in the Tropical Atlantic, will contribute to the overall goals of TACE and AMMA. PIRATA has been enhanced by a southwest extension and will be further enhanced in the northeastern and southeastern tropical Atlantic and by increasing the vertical resolution of temperature and salinity sensors on the ATLAS buoys and also by installing current sensors in the mixed layer. It was recognised that TACE won't be able to address climate variability and predictability issues of the whole tropical Atlantic given its focus on the eastern upwelling area. There is therefore a strong need for an additional project or activity in the western tropical Atlantic to meet the overarching TACE goal.

In the North Atlantic two projects providing enhanced observations and process studies are coming to an end: the Arctic-Subarctic Ocean Flux study (ASOF) and German SFB 460. Some of the ASOF arrays will probably continue under institutional support and the International Polar Year (IPY) initiative. However some important observational sites in the North Atlantic subpolar gyre will disappear in 2006.

The panel welcomed the new proposal to continue monitoring the Meridional Overturning Circulation (MOC) at 26.5°N under the UK RAPID2 project and the successful US CLIMODE (CLIvar Mode water Dynamics Experiment, http://www.climode.org/) process study (2005-2009) on the formation, subduction & dispersal of 18° water (EDW), the principal water mass of the upper subtropical North Atlantic.

A new Arctic Climate Panel (ACP) was formed in October 2004 under the auspices of WCRP's Climate and Cryosphere project (CliC) and is in charge of building on the legacy of the earlier Arctic Climate System Study (ACSYS) and taking a role in promoting and coordinating activities for the IPY. Given the important links with AIP it was strongly suggested that CLIVAR be a co-sponsor of ACP.

The AIP will foster closer links with VAMOS and VACS panels in order to address climate issues related to the South Atlantic.

Regarding links of AIP with other international programs it is worth mentioning the collaboration with IGBP Global Ocean Ecosystem Dynamics (GLOBEC) and Integrated Marine Biogeochemistry and Ecosystems Research (IMBER) programs on issues related to the role of climate variability and change on the ecosystem and prediction of impacts. This will be an important application for CLIVAR research. :

Finally the panel identified the new future challenges for the next 7 years of CLIVAR, in particular in developing:

- Strengths in anthropogenic climate change, in particular in relation to coupled modelling
- A greater focus on predictability
- Stronger relations with operational centres
- Greater interactions with VACS and VAMOS panels

It is essential to address needs of the society and establish a close relationship between research, applications and stakeholders. For this the AIP will take a specific focus on extreme events (e.g. hurricanes), predictability and anthropogenic climate change.

Particpants at the CLIVAR Tropical Atlantic Ocean Dynamics Workshop, Venice, Italy 17-19 October 2005