

Report to CLIVAR SSG-18

Panel or Working Group: CLIVAR-PAGES Working Group

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

1.1. The CLIVAR/PAGES Intersection Vision Document 2009:

The document outlines the focus and plans of the CLIVAR/PAGES Working Group for the coming years. Areas of research where the paleo-climate community can directly help with uncertainties in modern and future climate:

- Internal and forced variability over the last few millennia
- Sensitivity of the North Atlantic circulation
- Hydrological changes and interactions with the land surface
- Tropical Cyclones, Extreme Precipitation Events

1.2. The Paleoclimate Reconstruction (PR) Challenge:

The objective, independent evaluation of state-of-the-art reconstruction methods – Double blind tests of pseudo-proxy networks and simulations of climate change during the last few millennia.

1.3. CMIP5:

Paleo-component adopted from PMIP3 to CMIP5

- Last millennium - tier 1
- Mid Holocene and LGM - tier 2

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

The CLIVAR-PAGES Working Group is an intersection between WCRP CLIVAR and IGBP PAGES.

3. Workshops/meetings held

4. New activities being planned, including timeline,

4.1. WCRP Open Science Conference

The co-chairs will be convening the poster session “Using Paleoclimate Observations and Analysis for Improving Earth System Prediction”.

4.2. Reducing uncertainties in proxy reconstructions: Paleoclimate Reconstruction Challenge

Production of runs, intercomparison and analysis and development of a data bank of natural climate forcings of the past 2K years

4.3. Forward-Modelling of Proxy Data within ESMs

Development of suitable forward models incorporated within climate models directly or used with downscaling techniques to improve model-paleodata comparisons.

4.4. *Calibration of PaleoClimate Proxies*

Against variability and changes seen in the instrumental period, interaction between paleoclimatologists and modern observationalists for improved synthesis of the two approaches.

5. **Workshops / meetings planned**

The annual meeting of the CLIVAR/PAGES Intersection is due to take place in Denver, CO, around the time of the WCRP Open Science Conference. This meeting is intended to re-invigorate the PAGES/CLIVAR Intersection panel and solidify ideas for upcoming workshops, such as those listed below.

- Forward Modeling and regional downscaling
- AMO: Mechanisms and Impacts
- ENSO: Past and future variability
- Paleo-data/Model fusion - Data assimilation
- Extreme events (Tropical cyclones, extreme precipitation events, flooding)

6. **Issues for the SSG**

What are the SSG expectations for the CLIVAR/PAGES Intersection? Would welcome suggestions regarding participants and topics to be covered.

Some suggested topics from the panel to be covered going forward are:

- Climate predictability (paleoclimate perspective, early warning signals etc.);
- Impact of large volcanic events on climate from inter annual to multi decadal scales;
- Generate a 2k initiative on ocean basins / ocean circulation (as a complement to the PAGES 2k initiative which is so far focused on the land surfaces), with a coordinated effort to better document the multi decadal to centennial variability in ocean circulation.