

# PACMEDY results

## Project outputs and outcomes

*This section gathers the final results of the project. It will be updated gradually during the course of the project and only concerns public results. For PACMEDY partners the Work section which is password protected gathers more detailed information and ongoing work.*

- PACMEDY Presentation : end-term workshop of the research projects funded through the Belmont Forum-JPI Climate Collaborative Research Action Climate predictability and inter-regional linkages, organised on 8-9 July.

[Presentation available on Belmont Forum YouTube channel](#)

- PACMEDY PUBLICATIONS

[click here to access the publication list](#)

- Presentation on research needs on multi-decadal to centennial variability (JPI Forum, December 2020)

[presentation available here](#)

## Access to New or improved datasets

*This section provide information on the access to the different datasets produced by PACMEDY partners or to which PACMEDY partners have contributed*

### Climate mean state and trends

#### BIOME6000

The BIOME 6000 data set provides pollen-based reconstructions of vegetation at 21,000, 6000 and 0 yr BP. The updated version of the BIOME 6000 database is available from:

<https://researchdata.reading.ac.uk/99/>

Improved coverage for the Eastern Mediterranean, Middle east and the Black Sea-Caspian corridor (EMBSecBIO) is available from: Harrison, S.P. and Marinova, E., 2017. EMBSecBIO modern pollen biomisation. University of Reading Dataset. <http://dx.doi.org/10.17864/1947.109>.

An improved coverage of modern surface samples for vegetation and climate reconstructions is available from: Harrison, S.P., 2019. Modern Pollen Data for Climate Reconstructions, version 1 (SMPDS). University of Reading Dataset. <http://dx.doi.org/10.17864/1947.194>.

<https://researchdata.reading.ac.uk/id/eprint/194>

Two data sets have been produced to facilitate the use of the BIOME6000 data for climate reconstruction: Wei, D., Harrison, S.P. and Prentice, I. C., 2019. The climatic space of European pollen taxa. University of Reading. Dataset. <http://dx.doi.org/10.17864/1947.204>

Harrison, S.P. (2020) Climate reconstructions for the SMPDSv1 modern pollen data set. doi: 10.5281/zenodo.3605003.

## **Global Lake Status Database Update**

The Global Lake Status Database (GLSDB) provides reconstructions of changes in regional hydroclimate, specifically precipitation minus evaporation (P-E) based on interpretation of lake sedimentary and geomorphological data. Updates have been produced for Africa and Eurasia (currently publications in review) and are available from Sandy P. Harrison ([s.p.harrison@reading.ac.uk](mailto:s.p.harrison@reading.ac.uk))

## **Reading Paleofire Database**

The Reading Paleofire Database (RPD) is a update of the Global Charcoal Database, which provides sedimentary charcoal records documenting changing fire regimes. Updates have been produced for the northern mid- to high-latitudes, the circum-Mediterranean region and the neotropics.

Contact person : The database is available from Sandy P. Harrison ([s.p.harrison@reading.ac.uk](mailto:s.p.harrison@reading.ac.uk))

*Reference* : Publications documenting the RPD are currently in review.

## **SISAL (Speleothem Isotopes Synthesis and AnaLysis Working Group) :**

SISAL (Speleothem Isotopes Synthesis and AnaLysis Working Group) database. The SISAL database contains oxygen and carbon isotope data from speleothems worldwide.

Contact person : Sandy P. Harrison ([s.p.harrison@reading.ac.uk](mailto:s.p.harrison@reading.ac.uk))

The first version of the database is available from: <https://researchdata.reading.ac.uk/242/>

The second version of the database has been published: Comas-Bru, L., Atsawawaranunt, K, Harrison, S.P. and SISAL Working Group Members, 2020. <https://researchdata.reading.ac.uk/256/>

## **Mollusc data as a proxy for Sahel precipitation**

Reconstruction of monsoon rainfall in western Sahel in the past 1600 year from the oxygen isotopic values of fossil mollusc shells from the Saloum estuary in Senegal

Contact person: Matthieu Carré ([matthieu.carre@locean.ipsl.fr](mailto:matthieu.carre@locean.ipsl.fr))

The dataset is publicly available in the PANGAEA repository:

*Reference* : Carré, M., Azzoug, M., Zaharias, P., Camara, A., Cheddadi, R., Chevalier, M., Fiorillo, D.,

Gaye, A.T., Janicot, S., Khodri, M., Lazar, A., Lazareth, C.E., Mignot, J., Mitma Garcia, N., Patris, N., Perrot, O., Wade, M., 2018. Mollusk shell  $\delta^{18}O$  in the past 1600 years in the Saloum Delta, Senegal, PANGAEA. <https://doi.org/10.1594/PANGAEA.892303>

## **Tropical ocean multi proxy synthesis**

The SENSETROP tropical ocean multi proxy synthesis includes paleotemperature estimates derived from alkenones and foraminifera Mg/Ca proxies in oceanic sediment cores, and stable isotope values ; it has been updated to include Holocene records within the Pacmedy project.

This database named SENSETROP is hosted on <http://www.sensetrop.org>, allows interactive queries and data are still under embargo until the final publication.

Contact person : Access to the webserver is open under request to Thibault de Garidel, CEREGE (garidel@cerege.fr).

*Reference : Leduc, G., Garidel-Thoron, T. D., Kaiser, J., Bolton, C., and Contoux, C. (2017), Databases for sea surface paleotemperature based on geochemical proxies from marine sediments: implications for model-data comparisons, Quaternaire. Revue de l'Association française pour l'étude du Quaternaire, 28(2), 201-216, doi:10.4000/quaternaire.8034.*

## **Climate variability (interannual to multi-decadal)**

### **Update of the shell and coral database covering the tropical oceans**

Contact person : The synthesis is currently available upon request to Matthieu Carré (matthieu.carre@locean-ipsl.upmc.fr)

*Reference : manuscript in preparation*

## **Tree rings and speleothems over India**

Tree rings and speleothem data reconstructions have been achieved as part of PACMEDY and are available upon request.

\* Tree-ring data over India :

Contact Persons : Dr. H. P. Borgaonkar (hemant@tropmet.res.in; hpborgaonkar@gmail.com); Dr. Naveen Gandhi (naveen@tropmet.res.in)

*Reference : Borgaonkar, H.P., Gandhi, N., Somaru Ram, Krishnan, R., 2018. Tree-ring reconstruction of late summer temperatures in northern Sikkim (eastern Himalayas), Palaeogeography, Palaeoclimatology, Palaeoecology, 504, 125-135, DOI:10.1016/j.palaeo.2018.05.018*

\* Speleothem data from the peninsular India :

The dataset cover the period 1720-3180 Years BP :

Contact Person : Dr. Naveen Gandhi (naveen@tropmet.res.in)

*Reference : Sinha N., Gandhi, N., Chakraborty, S., Krishnan, R., Yadava, M.G., Ramesh R., 2018. Abrupt climate change at ~2800 yr BP evidenced by a stalagmite record from peninsular India, The Holocene, 28, 1-11, DOI:10.1177/0959683618788647*

## Access to PACMEDY simulations

*The following simulations can be directly accessed through international or modeling group data facilities. Other results can be made available upon request.*

### PMIP4-CMIP6 simulations

Simulations of the midHolocene and the last millennium have been run following the international PMIP4-CMIP6 protocol. They are stored on the ESGF facilities following the CMIP data request. Details on these simulations and access to the database are available on PMIP website

<https://pmip.lsce.ipsl.fr/>

- [experimental design](#)
- [access to ESGF CMIP6 database](#)

These PMIP4/CMIP6 simulations have been run by LSCE, Reading, MPI-M, HZG, Stockholm, and AWI as part of PACMEDY

### Transient Holocene simulations

- [Transient Holocene simulations](#)

## Publications and conferences

- Publications in academic (peer reviewed) journals : [PACMEDY Publications](#)
- [PhD, Master reports](#)
- [International and national conferences](#)
- [Large audience publications](#)

## Project deliverables

The major achievements of the project are summarized in the form of short reports organized following the different PACMEDY work packages

- D1.1 [Data syntheses for long term reconstruction \(times slices and transient\)](#)
- D1.2 [Holocene Climate Simulations](#)

- D1.3 Analysis of high-latitude and tropical teleconnections and interactions
- D2.1 Data syntheses for tropical interannual to multidecadal variability
- D2.2 Palaeoenvironmental modeling
- D2.3 Analyses of tropical variability
- D3.1 The West African Monsoon
- D3.2 The Indian Monsoon
- D3.3 The South American monsoon
- D4.1 Common behaviors and thresholds in mid-Holocene and future climates
- D4.2 Credibility of simulated monsoon trends and variability

## Outcomes of the project

<https://pacmedy.lsce.ipsl.fr/wiki/doku.php/results:projectoutcomes>

## Key results / slides

You can access here the key slides corresponding to ongoing PACMEDY activity.

<https://files.lsce.ipsl.fr/public.php?service=files&t=b57d323bf551097bbb3a2cf5bb65d1b7>

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