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 interregional linkages, organised on 8-9 July.

Presentation available on Belmont Forum YouTube channel

PACMEDY PUBLICATIONS

Transient Holocene simulations

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

Access to New or improved datasets

This section prodide 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, Middl east and the Black Sea-Caspian corrdior (EMBSeCBIO) us 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

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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)

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.

<u>Contact person</u>: The database is available from Sandy P. Harrison (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.

<u>Contact person</u>: Sandy P. Harrison (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

(Carré et al. 2019)

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.

<u>Contact person</u>: 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 shell and coral database covering the tropics

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:

<u>Contact Persons</u>: 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:

<u>Contact Person</u>: 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 internation or modeling group data facilities. Other results can be made available upon request.

PMIP4-CMIP6 simulations

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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
- Other reports

Project deliverables

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

These deliverables are accessible from the link below PACMEDY Deliverables

This access will be free at the end of the project. In the mean time the documents can be accessed upon request to Pascale Braconnot. A temporary password has been provide on the Belmont report for those who need to follow the status of PACMEDY results.

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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