



**PAL
MOD**

GERMAN
CLIMATE
MODELING
INITIATIVE

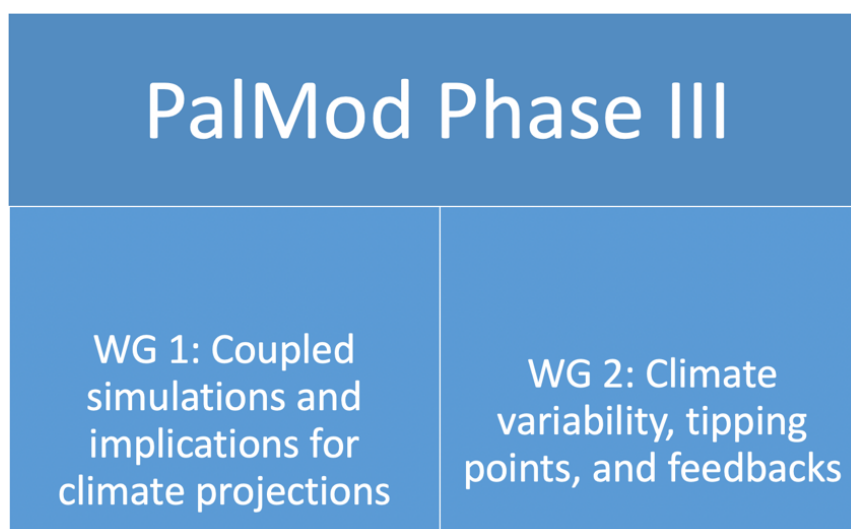
Newsletter 08 / 2021

Dear PalMod members,

welcome to the summer edition of the PalMod Newsletter.

Even if it is holiday season and everything seems to be relaxed, a lot of things are going on behind the scene.

Right after the General Assembly end of May we kicked off the conceptional work for PalMod Phase III. Starting from your discussion in the BOGs we drafted a possible structure for the last phase of our project.



For this, everyone is invited to hand in project sketches – so if you have an idea, please contact your topic PI as soon as possible.

Moreover, we have to hand in our DKRZ resource request two month earlier this year (end of August) - but then we will have the opportunity to use the new Levante computer at DKRZ in parallel with Mistral for 2 months (Nov and Dec 2021).

Last but not least: please have a look to the long list of recently published PalMod or PalM od related papers!

SAVE THE DATE for a talk of PalMod Seminar Series

Fri., 9. Sept.2021, 11h:

U. Mikolajewicz (MPI-M) & J. Lippold (Uni Heidelberg):

A data and model perspective on the Atlantic Ocean circulation from the Glacial to the Holocene

Connection details:

Join Zoom Meeting

<https://geomar-de.zoom.us/j/81106632350?pwd=V01MTThMVjhYZXErNnIEsnBJV1psdz09>

Meeting ID: 811 0663 2350

Passcode: 687248

Update on Milestones and Deliverables

Updated traffic lights, 02.08.2021

C	D	H	I	J	K	L
WP	WG	Due To	DAYS	-Y	Responsible	Task
WG3	WP3.3 M1	30.06.21	●	-33	Marum, AWI-B	Transient simulations including water isotopes for an abrupt climate change event during MIS3 and Termination I set up and ready to run
WG3	WP3.1 M3	30.06.21	●	-33	Marum	Development of age modelling strategies for time series without radiocarbon age control
WG3	WP3.3 M3	30.03.21	●	-125	AWI	Spectral estimation methods established and tested
WG3	WP3.3 D4	30.03.21	●	-125	AWI-P	Documentation of the spectral estimation method accounting for proxy biases
WG2	WP2.1 M1	30.06.21	●	-33	AWI	Adjust RECoM model for simulating prognostic atmospheric CO2 concentrations, including fluxes from weathering, and volcanism.
WG2	WP2.1 M2	30.06.21	●	-33	AWI	Include iron sources from marine shelves, rivers, hydrothermal activity and sea ice in RECoM
WG2	WP2.3 M1	30.06.21	●	-33	MPI-M	Transient deglaciation experiment with improved atmospheric sink component performed, publication draft
WG2	WP2.1 M4	30.06.21	●	-33	CAU	Transient effect of aeolian dust deposition changes and of temperature and sea level variations on ballasting implemented in HAMOCC
WG2	WP2.2 M1	30.06.21	●	-33	MPI	The development of vegetation and terrestrial carbon on exposed shelves and the leading factors for this development are figured out
WG2	WP2.2 M3	30.06.21	●	-33	PIK	Quantification of carbon cycle feedbacks operating through shelf processes during glacial inception and deglaciation with CLIMBER-X
WG2	WP2.3 M5	30.06.21	●	-33	MPI-C	Analysis of methane sink in transient simulations, publication draf
WG2	WP2.3 D3	30.06.21	●	-33	MPI-C	Publication on transient deglaciation experiments with methane sinks submitted
WG2	WP2.1 M5	30.06.21	●	-33	MARUM	Transient simulations including marine carbon isotopes for an abrupt climate change event during MIS3 and Termination I set up in CESM and ready to run
CC	CC2 M5	30.04.21	●	-94	HZG	Publication of initial standardized proxy data
CC	CC2 M10	30.06.21	●	-33	U Bonn	Bayesian framework set up and examples of probabilistic evaluations of temperature and precipitation in time slice simulations against pollen synthesis / macro fossils available
CC	CC2 D8	30.06.21	●	-33	Uni Bonn	Plugin for Bayesian framework of spatial evaluation (time slices) documented and ready for integration in toolbox
CC	CC2 M14	30.06.21	●	-33	UHD	Spatio-temporal plot workflow for the model-data comparison toolbox facilitating visual browsing of results

You find the documentations of all Milestones and Deliverables completed here:

<https://www.palmod.de/group/palmod/milestones-deliverables>

If you meet a milestones or deliverable let me know, so I can remove it from the list - if you have to shift a milestones or deliverables, please contact me (kfieg@geomar.de)

Informal update on the use of DKRZ resources, 02.08.2021

DKRZ Project	[n*h] Granted for 2021	[n*h] Used by 02.08.2021*	[n*h] to be used until next cut (end of September)
0989 / WG1	1.197.637	761.832	136.395
1030 / WG2	670.282	357.626	145.085
1029 / WG3	151.200	101.218	12.182
0993 / CC	125.737	56.422	37.880
1192 / CC2-DM	0	0	0

* incl. reallocated / expired resources

New PalMod / PalMod related Paper and Data sets

Paper

Brovkin, V., Brook, E., Williams J.W., Bathiany, S., Lenton, T.M., Barton, M., DeConto, R.M., Donges, J.F., et al. (2021) *Past abrupt changes, tipping points and cascading impacts in the Earth system*, *Nature Geoscience*, doi: [10.1038/s41561-021-00790-5](https://doi.org/10.1038/s41561-021-00790-5)

Bühler, J. C., Roesch, C., Kirschner, M., Sime, L., Holloway, M. D., and Rehfeld, K. (2021): Comparison of the oxygen isotope signatures in speleothem records and iHadCM3 model simulations for the last millennium, *Clim. Past*, 17, 985–1004, <https://doi.org/10.5194/cp-17-985-2021>, 2021.

Ionita, M., M. Dima, V. Nagavciuc, P. Scholz, and G. Lohmann, 2021: *Past megadroughts in central Europe were longer, more severe and less warm than modern droughts*. *Commun Earth Environ* 2, 61. doi:10.1038/s43247-021-00130-w

Kageyama, M., Harrison, S. P., Kapsch, M.-L., Lofverstrom, M., Lora, J. M., Mikolajewicz, U., Sherriff-Tadano, S., Vadsaria, T., Abe-Ouchi, A., Bouttes, N., Chandan, D., Gregoire, L. J., Ivanovic, R. F., Izumi, K., LeGrande, A. N., Lhardy, F., Lohmann, G., Morozova, P. A., Ohgaito, R., Paul, A., Peltier, W. R., Poulsen, C. J., Quiquet, A., Roche, D. M., Shi, X., Tierney, J. E., Valdes, P. J., Volodin, E., and Zhu, J.: *The PMIP4 Last Glacial Maximum experiments: preliminary results and comparison with the PMIP3 simulations*, *Clim. Past*, 17, 1065–1089, <https://doi.org/10.5194/cp-17-1065-2021>, 2021.

Krebs-Kanzow, U., Gierz, P., Rodehacke, C. B., Xu, S., Yang, H., and Lohmann, G.: *The diurnal Energy Balance Model (dEBM): a convenient surface mass balance solution for ice sheets in Earth system modeling*, *The Cryosphere*, 15, 2295–2313, <https://doi.org/10.5194/tc-15-2295-2021>, 2021.

Kreuzer, M., R. Reese, W.N. Huiskamp, S. Petri, T. Albrecht, G. Feulner, and R. Winkelmann (2021): *Coupling framework (1.0) for the PISM (1.1.4) ice sheet model and the MOM5 (5.1.0) ocean model via the PICO ice shelf cavity model in an Antarctic domain*. *Geosci. Model Dev.*, 14, 3697–3714, 2021, <https://doi.org/10.5194/gmd-14-3697-2021>

Latinović, Milena, 2021. A method for validation of GIA models using sea-level data with applications to Hudson Bay and SW Fennoscandia, **PhD-thesis**, <http://dx.doi.org/10.17169/refubium-2958>.

Congratulation !!!!

Liu, B., Six, K. D., and Ilyina, T.: *Incorporating the stable carbon isotope ^{13}C in the ocean biogeochemical component of the Max Planck Institute Earth System Model*, Biogeosciences, 18, 4389–4429, <https://doi.org/10.5194/bg-18-4389-2021>, 2021.

Niu, L., G. Lohmann, P. Gierz, E. J. Gowan, G. Knorr, 2020: *Coupled climate-ice sheet modelling of MIS-13 reveals a sensitive Cordilleran Ice Sheet*. Global and Planetary Change, 103474, <https://doi.org/10.1016/j.gloplacha.2021.103474>

Rimbu, N., M. Ionita and G. Lohmann, 2021: *A synoptic scale perspective on Greenland ice core $\delta^{18}\text{O}$ variability and related teleconnection patterns*. Atmosphere 12(3), 294; doi:10.3390/atmos12030294

Rosentau, A., Klemann, V., Bennike, O., Steffen, H., Wehr, J., Latinovic, M., Bagge, M., Ojala, A., Berglund, M., Becher, G. P., Schoning, K., Hansson, A., Nielsen, L., Clemmensen, L. B., Hede, M. U., Kroon, A., Pejrup, M., Sander, L., Stattegger, K., Schwarzer, K., Lampe, R., Lampe, M., Uścińowicz, S., Bitinas, A., Grudzinska, I., Vassiljev, J., Nirgi, T., Kublitskiy, Y., Subetto, D. (2021): *A Holocene relative sea-level database for the Baltic Sea*. Quaternary Science Reviews, 266, 107071. <https://doi.org/10.1016/j.quascirev.2021.107071>

Shi, X., Lohmann, G., Sidorenko, D., Yang, H., 2020: *Early-Holocene simulations using different forcings and resolutions in AWI-ESM*. The Holocene 30 (7), 996-1015, doi:10.1177/0959683620908634

Data sets

Kleinen, Thomas; Gromov, Sergey; Steil, Benedikt; Brovkin, Victor (**2021**). *Natural methane emissions 1850-3009*. World Data Center for Climate (WDCC) at DKRZ. http://cera-www.dkrz.de/WDCC/ui/Compact.jsp?acronym=DKRZ_LTA_060_ds00007

Rosentau, A., Klemann, V., Bennike, O., Steffen, H., Wehr, J., Latinovic, M., Bagge, M., Ojala, A., Berglund, M., Peterson Becher, G., Schoning, K., Hansson, A., Nielsen, L., Clemmensen, L. B., Hede, M. U., Kroon, A., Pejrup, M., Sander, L., Stattegger, K., Schwarzer, K., Lampe, R., Lampe, M., Uścińowicz, S., Bitinas, A., Grudzinska, I., Vassiljev, J., Nirgi, T., Kublitskiy, Y., Subetto, D. (2021): *A Holocene relative sea-level database for the Baltic Sea*. <https://doi.org/10.5880/GFZ.1.3.2020.003>

More useful news and links



All protocols of the Steering Group Meetings can be found here:

<https://www.palmod.de/group/palmod/protocols>

For general details on the PalMod II project see <https://palmod.de>