



**PAL
MOD**

GERMAN
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Newsletter December 2021

Dear PalMod members,

there are good news and bad news for you in the last Newsletter of 2021: the good news is the long list of new PalMod publications at the end of the Newsletter, the bad news is first the cancellation of the CC1 workshop in December due to the pandemic situation (shifted to spring 2022) and second a massive reduction of computing time and work space at DKRZ for 2022 that the PalMod community has to face.

Season's greetings and best wishes for 2022, Kerstin

A quick remark: if you already planned your WG / CC Annual Assembly for 2022 (virtual or in person), please let me know so I can announce the date.

New PalMod Staff

Please welcome **Fanny Lhardy** at MPI-M. She is the successor on the position of Thomas Extier and working for CC1.

Please note:

The announced Workshop "*CC1 workshop on ESMTTOOLS Dec. 14. & 15. 2021*" is **postponed to Spring 2022.**

Update on Milestones and Deliverables

Traffic lights, 02.12.2021

WP	WG	Due To	DAYS	🚦	Responsible	Task
WG3	WP3.3 D1	30.09.21	-63	🔴	Marum, AWI-B	Transient simulations including water isotopes for abrupt climate change events during MIS3
WG3	WP3.3 D2	30.09.21	-63	🔴	Marum, AWI-B	Transient simulations including water isotopes for Termination I
WG3	WP3.3 M1	30.06.21	-155	🔴	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
WG2	WP2.1 M1	30.06.21	-155	🔴	AWI	Adjust REcoM model for simulating prognostic atmospheric CO2 concentrations, including fluxes from weathering, and volcanism.
WG2	WP2.1 M2	30.06.21	-155	🔴	AWI	Include iron sources from marine shelves, rivers, hydrothermal activity and sea ice in REcoM
WG2	WP2.2 M1	30.06.21	-155	🔴	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	-155	🔴	PIK	Quantification of carbon cycle feedbacks operating through shelf processes during glacial inception and deglaciation with CLIMBER-X
WG2	WP2.3 M5	30.11.21	-2	🔴	MPI-C	Analysis of methane sink in transient simulations, publication draf
WG2	WP2.3 D1	30.09.21	-63	🔴	MPI-M	Publication on transient deglaciation experiments with methane sinks submitted
WG2	WP2.3 D3	30.11.21	-2	🔴	MPI-C	Publication on transient deglaciation experiments with methane sinks submitted
WG2	WP2.1 M5	30.06.21	-155	🔴	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
WG1	WP1.3 M4	30.09.21	-63	🔴	PIK	Analysis of climate and carbon cycle feedbacks
WG1	WP1.3 D1	30.09.21	-63	🔴	PIK	Providing early diagnostics in the ice sheet-climate system based on full glacial cycle CLIMBER-X simulations
CC	CC2 M14	30.06.21	-155	🔴	UHD	Spatio-temporal plot workflow for the model-data comparison toolbox facilitating visual browsing of results
CC	CC2 M6	31.10.21	-32	🔴	HZG	Set of ensemble tools documented and available to PalMod
CC	CC2 D5	31.10.21	-32	🔴	HZG	Plugin for ensemble metrics documented and ready for integration in toolbox
CC	CC2 D11	30.09.21	-63	🔴	UHD	v0.1 of the toolbox combining consistent metrics for surface climate changes in model and proxy data installed on MISTRAL and available to the PalMod community for testing
CC	CC2 D15	30.09.21	-63	🔴	GEOMAR, MPI	Volcanically forced and unforced snapshot simulations with MPI-ESM available

You find the documentations of all completed Milestones and Deliverables 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)

Update on DKRZ business

To remind you, as a consortium we asked for 2022 for the following resources:

Subproject	Computation time [n*h]	Storage WORK [GiB]
WG1, ba0989	1.927.263	1.684.000
CC, bk0993	169.000	204.000
WG3, bb1029	124.200	673.000
WG2, bm1030	858.800	1.852.940
DM, bk1192	50.000	150.000
Total	3.129.263	4.563.940

I did not receive an official comment or the final numbers yet, but compute resources granted to PalMod by the WLA will be reduced by approx. 60% to 40% and /work by nearly 50%. As usually, the cuttings will be broken down to the subprojects (but can be shifted on request).

Because the new system Levante is not ready for use yet, the 2021 shares for MISTRAL will be prolonged in 2022 as long as necessary to enable production.

New PalMod related papers

Heaton, Timothy J; Bard, Edouard; Bronk Ramsey, Christopher; **Butzin, Martin; Köhler, Peter**; Muscheler, Raimund; Reimer, Paula J; Wacker, Lukas (2021): *Radiocarbon: A key tracer for studying Earth's dynamo, climate system, carbon cycle, and Sun*. Science, 374, eabd7096, <https://doi.org/10.1126/science.abd7096>

Zhang, X., Barker, S., Knorr, G., Lohmann, G., Drysdale, R., Sun, Y., Hodell, D., & Chen F. (2021): Direct astronomical influence on abrupt climate variability. *Nat. Geosci.* **14**, 819–826. <https://doi.org/10.1038/s41561-021-00846-6>

Brovkin, V., Brook, E., Williams, J.W. *et al.* Past abrupt changes, tipping points and cascading impacts in the Earth system. *Nat. Geosci.* **14**, 550–558 (2021). <https://doi.org/10.1038/s41561-021-00790-5>

Extier, T., Six, K., Liu, B., Paulsen, H. and Ilyina, T. (2021) Oceanic CO₂ outgassing triggered by terrestrial organic carbon fluxes during deglacial flooding. *Climate of the Past*. <https://doi.org/10.5194/cp-2021-112>

Bothe, O., Rehfeld, K., Konecky, Jonkers, L. (2021). Towards increased interoperability of paleoenvironmental observation data. *Past Global Changes Magazine*, Vol. 29, Issue 1, pp. 59–59. Past Global Changes (PAGES). <https://doi.org/10.22498/pages.29.1.59>

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>

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.,

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<https://doi.org/10.5880/GFZ.1.3.2020.003>

Kleinen, T., S. Gromov, B. Steil & V. Brovkin (2021) Atmospheric methane underestimated in future climate. *Environmental Research Letters*, 16, 094006, <https://doi.org/10.1088/1748-9326/ac1814>

Bühler, J. C., Roesch, C., Kirschner, M., Sime, L., Holloway, M. D., and Rehfeld, K.: 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.

Latinović, Milena, 2021. A method for validation of GIA models using sea-level data with applications to Hudson Bay and SW Fennoscandia, PhD-thesis, A method for validation of GIA models using sea-level data with applications to Hudson Bay and SW Fennoscandia, 160 p., <http://dx.doi.org/10.17169/refubium-2958>.

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>

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Heinrich, H., Schmidt, C., Roettig, C., **Ziemen, F.**, **Mikolajewicz, U.** & Faust, D. (2021). Massive deposition of Sahelian dust on the Canary Island Lanzarote during North Atlantic Heinrich Events. *Quaternary Research*, first view. [doi:10.1017/qua.2020.100](https://doi.org/10.1017/qua.2020.100)