Newsletter 05 / 2021

Dear PalMod members,

thank you all for sending the PalMod Phase II interim reports 2020 in time - the list is almost complete and the individual reports can be found for download in the internal section of the PalMod pages (https://www.palmod.de/group/palmod/85).

Moreover, listen to Gerrit Lohmann in a PalMod related Podcast (in German) available from www.palmod.de or https://www.weltderphysik.de/mediathek/podcast/palaeoklimatologie/

SAVE THE DATES

- virtual **PalMod General Assembly**
  on 27. / 28. May 2021 (noon to noon)
  Agenda and connection details will follow the next days

- **PalMod Seminar Series**
  Fri, 07.05.2021, 15h:
  Rachel Rhodes (Uni Cambridge / BAS, UK), Thomas Kleinen (MPI-M, D):
"A data and model perspective on methane from the Last Glacial period to the present"

Connection details:
https://geomar.webex.com/geomar/j.php?MTID=m779fec1691654c742d6a1a957dcf6112
Friday, May 7, 2021 15:00h | (UTC+02:00) Berlin
Meeting number: 183 213 5388
Password: UXpN7TNc4C7

Update on Milestones and Deliverables

Updated traffic lights, 03.05.2021

WP	WG	Due To	DAYS	Responsible	Task
WG3	WP3.2 M1	30.09.20	-215	GFZ	Synchronization of lacustrine and marine data-bases
WG2	WP2.1 M3	30.09.20	-215	MPI	Successful implementation adjustments and extensions that are necessary in HAMOCC for the transient simulations in interactive carbon cycle mode
WG3	WP3.1 M1	30.03.21	-34	Marum	Synthesis of marine proxy time series with stratigraphy based on benthic δ18O and radiocarbon
WG3	WP3.1 M7	30.03.21	-34	Marum	Successful implementation of the interface to DIVA interpolation method
WG3	WP3.1 D1	30.03.21	-34	Marum	Synthesis of marine paleoclimate time series spanning 130,000 years
WG3	WP3.2 M2	30.03.21	-34	GFZ	Synthesis of lake, marine, ice core and speleothem records spanning Greenland Stadials 21-24
WG3	WP3.3 M3	30.12.20	-124	AWI	Spectral estimation methods established and tested
WG3	WP3.3 D4	30.12.20	-124	AWI-P	Documentation of the spectral estimation method accounting for proxy biases
WG2	WP2.1 M1	30.12.20	-124	AWI	Adjust REcoM model for simulating prognostic atmospheric CO2 concentrations, including fluxes from weathering, and volcanism.
WG2	WP2.1 M2	30.03.21	-34	AWI	Include iron sources from marine shelves, rivers, hydrothermal activity and sea ice in REcoM
WG2	WP2.1 M5	30.12.20	-124	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	WP1.4 M1	30.03.21	-34	GFZ	Set-up of reference 3d earth structure in VILMA for use in main GCMs for coupling to ice-sheet dynamics and for sea-level reconstructions
WG1	WP1.4 M2	30.03.21	-34	GFZ, PIK	Coupling of VILMA and PISM-PICO
CC	CC2 M5	30.04.21	-3	HZG	Publication of initial standardized proxy data

- if you met a milestones or deliverable let me know, so I can remove it from the list

if it foreseeable, that you have to shift a milestones or deliverables, contact me (kfieg@geomar.de

Update on use of DKRZ resources in Q2

DKRZ Project	[n*h] Granted for 2021	[n*h] Used by 03.05.2021*	[n*h] to use until cut end of June
0989 / WG1	1.063.206	404.884 (=101.221nh/month)	126.719 (= 63.360nh/month)
1030 / WG2	779.150	232.182 (=58.045nh/month)	157.939 (=78.970nh/month)
1029 / WG3	151.200	57.140 (=14.285nh/month)	18.460 (=9.230nh/month)
CC / 0993	151.300	37.990 (=9.498nh/month)	37.660 (=18.830nh/month)

* incl. reallocated / expired resources

	No resource cut expected
	No or small cut expected
	Risk of cut expected

New PalMod related Publications

Paul, A., Mulitza, S., Stein, R., and Werner, M.: A global climatology of the ocean surface during the Last Glacial Maximum mapped on a regular grid (GLOMAP), Clim. Past, 17, 805–824, https://doi.org/10.5194/cp-17-805-2021, 2021.

Barker, S., Knorr, G. Millennial scale feedbacks determine the shape and rapidity of glacial termination. *Nat Commun* **12,** 2273 (2021). https://doi.org/10.1038/s41467-021-22388-6

Kapsch, M.-L., Mikolajewicz, U., Ziemen, F., Rodehacke, C. & Schannwell, C.(2021). Analysis of the surface mass balance for deglacial climate simulations. *The Cryosphere*, *15*, 1131-1156. doi:10.5194/tc-15-1131-2021 [Fulltext]

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

Liu, B., Six, K. D., and Ilyina, T.: Incorporating the stable carbon isotope 13C in the ocean biogeochemical component of the Max Planck Institute Earth System Model, Biogeosciences Discuss. [preprint], https://doi.org/10.5194/bg-2021-32, in review, 2021.

Saunois, M., Stavert, A., Poulter, B., Bousquet, P., Canadell, J., Jackson, R., Raymond, P., Dlugokencky, E., Houweling, S., Patra, P., Ciais, P., Arora, V., Bastviken, D., Bergamaschi, P., Blake, D., Brailsford, G., Bruhwiler, L., Carlson, K., Carrol, M., Castaldi, S., Chandra, N., Crevoisier, C., Crill, P., Covey, K., Curry, C., Etiope, G., Frankenberg, C., Gedney, N., Hegglin, M., Höglund-Isakson, L., Hugelius, G., Ishizawa, M., Ito, A., Janssens-Maenhout, G., Jensen, K., Joos, F., Kleinen, T., Krummel, P., Langenfelds, R., Laruelle, G., Liu, L., Machida, T., Maksyutov, S., McDonald, K., McNorton, J., Miller, P., Melton, J., Morino, I., Müller, J., Murgia-Flores, F., Naik, V., Niwa, Y., Noce, S., O'Doherty, S., Parker, R., Peng, C., Peng, S., Peters, G., Prigent, C., Prinn, R., Ramonet, M., Regnier, P., Riley, W., Rosentreter, J., Segers, A., Simpson, I., Shi, H., Smith, S., Steele, P., Thornton, B., Tian, H., Tohjima, Y., Tubiello, F., Tsuruta, A., Viovy, N., Voulgarakis, A., Weber, T., van Weele, M., van der Werf, G., Weiss, R., Worthy, D., Wunch, D., Yin, Y., Yoshida, Y., Zhang, W., Zhang, Z., Zhao, Y., Zheng, B., Zhu, Q., Zhu, Q. & Zhuang, Q. (2020). The Global Methane Budget: 2000–2017. *Earth System Science Data*, 12, 1561-1623. https://doi.org/10.5194/essd-12-1561-2020

Börker, J., Hartmann, J., Amann, T., Romero, Mujalli, G., Moosdorf, N., & Jenkins, C. (2020). "Chemical weathering of loess and its contribution to global alkalinity fluxes to the coastal zone during the Last Glacial Maximum, Mid- Holocene, and Present." Geochemistry, Geophysics, Geosystems 21(7): https://doi.org/10.1029/2020GC008922

Jonkers, L., O. Cartapanis, M. Langner, N. McKay, S. Mulitza, A. Strack, and M. Kucera. 2020. “Integrating Palaeoclimate Time Series with Rich Metadata for Uncertainty Modelling: Strategy and Documentation of the PalMod 130k Marine Palaeoclimate Data Synthesis.” *Earth Syst. Sci. Data* 12 (2): 1053–81, 2020, https://doi.org/10.5194/essd-12-1053-2020

Konecky, Bronwen L., Nicholas P. McKay, Laia Comas-Bru, Emilie P. Dassié, Kristine L. DeLong, Georgina M. Falster, Matt J. Fischer, et al. (inkl. L. Jonkers) 2020. "The Iso2k Database: A Global Compilation of Paleo-δ18O and δ2H Records to Aid Understanding of Common Era Climate." *Earth System Science Data* 12 (3): 2261–88. https://doi.org/10.5194/essd-12-2261-2020

Dolman, A. M., Kunz, T., Groeneveld, J., and Laepple, T.: A spectral approach to estimating the timescale-dependent uncertainty of paleoclimate records – Part 2: Application and interpretation, 17, 825–841, https://doi.org/10.5194/cp-17-825-2021 (akzeptiert, 2021).
Dolman, A. M., Groeneveld, J., Mollenhauer, G., Ho, S. L., and Laepple, T.: Estimating bioturbation from replicated small-sample radiocarbon ages., 19, https://doi.org/10.1002/essoar.10504501.2 , (in revision, 2020)

Kunz, T., Dolman, A. M., & Laepple, T.: A spectral approach to estimating the timescale-dependent uncertainty of paleoclimate records – Part 1: Theoretical concept. Climate of the Past, 16(4), 1469–1492. https://doi.org/10.5194/cp-16-1469-2020, 2020.
Lougheed, B. C., Ascough, P., Dolman, A. M., Löwemark, L., and Metcalfe, B.: Re-evaluating 14C dating accuracy in deep-sea sediment archives, 2, 17–31, https://doi.org/10.5194/gchron- 2-17-2020 , 2020.

Sun, S., Meyer, V. D., Dolman, A. M., Winterfeld, M., Hefter, J., Dummann, W., McIntyre, C., Montluçon, D. B., Haghipour, N., Wacker, L., Gentz, T., Voort, T. S. van der, Eglinton, T. I., and Mollenhauer, G.: 14C Blank Assessment in Small-Scale Compound-Specific Radiocarbon Analysis of Lipid Biomarkers and Lignin Phenols, 62, 207–218, https://doi.org/10.1017/RDC.2019.108, 2020.

Janine Börker, Jens Hartmann, Gibran Romero-Mujalli, and Gaojun Li (2019). "Aging of basalt volcanic systems and decreasing CO2 consumption by weathering." Earth Surf. Dynam. 7(1): 191-197, 2019 https://doi.org/10.5194/esurf-7-191-2019

Cuthbert, M.O., Gleeson, T., Moosdorf, N. *et al.* Global patterns and dynamics of climate–groundwater interactions. *Nature Clim Change* 9, 137–141 (2019). https://doi.org/10.1038/s41558-018-0386-4

Sun, S., Meyer, V. D., Dolman, A. M., Winterfeld, M., Hefter, J., Dummann, W., McIntyre, C., Montluçon, D. B., Haghipour, N., Wacker, L., Gentz, T., Voort, T. S. van der, Eglinton, T. I., and Mollenhauer, G.: 14C Blank Assessment in Small-Scale Compound-Specific Radiocarbon Analysis of Lipid Biomarkers and Lignin Phenols, 62, 207–218, https://doi.org/10.1017/RDC.2019.108 , 2020.

- **More useful news and links**

The protocol of the past Steering Group Meetings can be found:
https://www.palmod.de/group/palmod/protocols

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