



**PAL
MOD**

GERMAN
CLIMATE
MODELING
INITIATIVE

Newsletter June 2022

Dear PalMod members,

we, the coordination team, would like to thank everyone for their warm and more than positive feedback on our PalMod General Assembly, that took place in Travemünde in May. It was a pleasure to organize it for you.

Please find the links to the recording of the talks as. Well as the titles of the posters below.

Please note: we discussed and decided as a plenum to postpone the International Open Science Conference (IOSC). It will now be organized as a back – to – back event with the EGU in April 2023. The date will be 22. & 23. 04.2023. Details will follow.

Moreover - business as usual: please have a look on the list of the Milestones and Deliverables overdue and let me know if / when I can remove a M or D from my list.

1. Appendix PalMod GA 2020

Statistics:

- 73 participants attended in person
- Up to 20 participants attended online
- We had 2 extended poster sessions with 39 posters in total

The links to the talks:

CC Overview, Rehfeld: <https://nextcloud.dkrz.de/s/DyxZFZkt3iZFWt7>

CC1 Bockelmann: <https://nextcloud.dkrz.de/s/J6MzHGcy9TLDxds>

CC2 Chevalier: <https://nextcloud.dkrz.de/s/XWzCjx5iiETXqFY>

WG3 Overview, Mulitza: <https://nextcloud.dkrz.de/s/Caja8YXmoQ5iQPA>

WG3 Herzsuh: <https://nextcloud.dkrz.de/s/79gMpC7axje8BjA>

WG3 Werner: <https://nextcloud.dkrz.de/s/tFpnqcjFwKazap4>

WG2 Overview, Ilyina: <https://nextcloud.dkrz.de/s/SM3p38ReDDWZ2AD>

WG2 Kurahashi: <https://nextcloud.dkrz.de/s/kg8SZyi4nQezYgt>

WG2 Liu/Kleinen: <https://nextcloud.dkrz.de/s/6pKeKjrzXDQHkTj>

WG1 Overview Mikolajewicz: <https://nextcloud.dkrz.de/s/QDyC96XojXZP79W>

WG1 Merkel: <https://nextcloud.dkrz.de/s/aqpxNEB2FnPHZoa>

WG1 Bagge/Albrecht: <https://nextcloud.dkrz.de/s/R6r788RRwSqKCZX>

AA Focus Group Klemann/Winkelmann: <https://nextcloud.dkrz.de/s/AnSHRwKWBtiRRBC>

MIP Knorr/Kapsch: <https://nextcloud.dkrz.de/s/QCi7QWKbdNKneHe>

Title of posters and authors:

Authors	Titel	Institution
M. Butzin, P. Köhler, Y. Ye, C. Völker (AWI)	FESOM (ocean @ AWI-ESM) evaluation with bomb pulse $\Delta^{14}\text{C}$	AWI
Y. Ye, C. Völker, M. Butzin, P. Köhler (AWI)	AWI-ESM marine C cycle in PI and LGM	AWI
L. Schild (AWI)	Improving pollen-based tree cover reconstructions	AWI
X. Shi & M. Werner (AWI)	Glacial and interglacial simulations with the isotope-enabled Earth system model AWIESM	AWI
A. Dolman & T. Läpple (AWI)	Glacial vs. Holocene climate variability in marine $\delta^{18}\text{O}$ proxy data and simulations.	AWI
L. Ackermann (AWI)	Transient Simulation into the Last Inception with Interactive Northern Hemispheric Ice Sheets".	AWI
Niu Lu (AWI)	Self-adaptive" Laurentide Ice Sheet towards the Last Glacial Maximum	AWI
P. Meister (AWI)	Climate reconstruction using Oxygen isotopes from diatom silica ($\delta^{18}\text{OSi}$)	AWI
Ch. Li et al. (AWI)	Global mega-biome changes since 25 cal ka BP inferred from data-model comparisons	AWI
M. Heinemann & B. Schneider (CAU)	Particle ballasting experiments with CLIMBER-X	CAU

S.Mahfuz, B. Philippi, T. Slawig (CAU)	Parallel-in-time methods for turbulent flow: a step to ocean circulation models	CAU
M. Zeller & T. Martin (GEOMAR)	Role of eddies in heat redistribution in the high-latitude Southern Ocean	GEOMAR
J.Belo, M.Tooney, M. Jegen, S.Kutterolf, (GEOMAR), K. Rehfeld (Uni Tübingen)	A proxy-based semi-stochastic ensemble reconstruction of volcanic stratospheric sulfur injection (VSSI) for the last glacial cycle	GEOMAR, Uni Tübingen
M. Bagge, V. Klemann, (GFZ), T. Albrecht, R. Winkelmann (PIK) et al.	Solid Earth component in coupled ESMs	GFZ, PIK
O. Bothe (Hereon)	An example of a regional consistency assessment for transient simulations and paleoenvironmental data using the ensemble methods within the Palaeo ToolBox	Hereon
D. Latinović & U. Merkel (MARUM)	15.2 ka AMOC stability experiments	MARUM
T. Kurahashi-Nakamura, A. Paul, U. Merkel, M. Schulz	Glacial state of the carbon cycle: time-slice simulations with CESM	MARUM
M. Langener & S. Mulitza (MARUM)	PaleoDataMap	MARUM
S. Beyer (MARUM)	Facilitating factors for large-scale ice surges	MARUM
T. Kovacs (MARUM)	Simulated isotopic fingerprint of AMOC variability	MARUM
M. Kapsch, U. Mikolajewicz, C. Schannwell, F. Ziemann (MPI-M)	Controls of the ocean response in simulation of the last deglaciation	MPI-M
U. Mikolajewicz, M. Kapsch, C. Schannwell et al. (MPI-M)	Fully coupled Simulations of MIS3, Deglaciation and Future	MPI-M
T. Riddick (MPI-M)	Dynamic Lake Modelling for Coupled Paleoclimate Runs of the Last Glacial Cycle	MPI-M
B. Liu (MPI-M)	Impact of ocean circulation and complexity of biological pump on the LGM marine biogeochemistry in MPI-ESM	MPI-M

F. Lhardy (MPI-M)	Implementation of weathering fluxes in MPI-ESM runs of the last deglaciation	MPI-M
T. Kleinen (MPI-M)	Atmospheric CH ₄ : Through the glacial, into the future	MPI-M
C. Schanwell (MPI-M)	Sensitivity of ice-sheet surge characteristics to boundary forcing perturbations	MPI-M
A. Dallmeyer et al. (MPI-M)	PalMod Vegetation Task Force – a successful story of cooperation	MPI-M
R. Calov & A. Ganopolski (PIK)	Effect of climate biases, climate acceleration and ice sheet model resolution on glacial inception in CLIMBER-X simulations.	PIK
M. Willeit & A. Ganopolski (PIK)	Challenges in simulating glacial inception with interactive CO ₂ using CLIMBER-X.	PIK
M. Kreuzer & W. Huiskamp (PIK)	Coupling framework for simulating multi-millennial interactions of the Antarctic Ice Sheet and the global ocean	PIK
A. Ramisch (GFZ)	VARDA 2.0 - Using varved sediments to build paleoclimatic networks	PIK
M. Chevalier, A. Hense (Uni Bonn) U. Herzschuh, Ch. Li (AWI), A. Dallmeyer (MPI-M), JP. Baudouin. (Uni Tübingen)	Refining data-model biome comparisons using the Earth Movers' Distance (EMD)	Uni Bonn, AWI, MPI-M, Uni Tübingen
M. Chevalier, A. Hense (Uni Bonn)	Bayesian Model Evaluation: the case of binary observations	Uni Bonn
JP Baudouin (Uni Tübingen)	Using PTBox for pseudo proxy analyses	Uni Tübingen

2. Update on Milestones and Deliverables (Status 07.06.2022)

If you meet a M or D or / and report it in your Zwischenbericht, please let me know (kfieg@geomar.de), so I can remove it from the list!

Overdue M&D since 2021

WP	WG	Due To	DAYS	Y	Responsible	Task
WG2	WP2.2 M5	30.12.21	●	-159	UNI HH	Mapping of the geochemical and lithological characteristics of the continental shelves
WG2	WP2.2 M4	30.12.21	●	-159	PIK	Spin-up and initialization procedures for permafrost and peat carbon pools and marine sediment state
WG2	WP2.3 M3	30.12.21	●	-159	MPI-M	Transient experiment glacial inception performed, publication draft
WG1	WP1.2 M3	30.12.21	●	-159	AWI, Marum, MPI	Data from first asynchronously coupled MIS3 simulations available to the PalMod community
WG2	WP2.3 M5	30.11.21	●	-189	MPI-C	Analysis of methane sink in transient simulations, publication draf
WG2	WP2.3 D3	30.11.21	●	-189	MPI-C	Publication on transient deglaciation experiments with methane sinks submitted
WG3	WP3.1 D6	30.09.21	●	-250	Marum	Updated version of PaleoDataView including DTW functionality
WG2	WP2.3 D1	30.09.21	●	-250	MPI-M	Publication on transient deglaciation experiments with methane sinks submitted
WG1	WP1.3 M4	30.09.21	●	-250	PIK	Analysis of climate and carbon cycle feedbacks
WG1	WP1.3 D1	30.09.21	●	-250	PIK	Providing early diagnostics in the ice sheet-climate system based on full glacial cycle CLIMBER-X simulations
WG2	WP2.1 M1	30.06.21	●	-342	AWI	Adjust REcoM model for simulating prognostic atmospheric CO2 concentrations, including fluxes from weathering, and volcanism.
WG2	WP2.1 M2	30.06.21	●	-342	AWI	Include iron sources from marine shelves, rivers, hydrothermal activity and sea ice in REcoM
WG2	WP2.2 M3	30.06.21	●	-342	PIK	Quantification of carbon cycle feedbacks operating through shelf processes during glacial inception and deglaciation with CLIMBER-X

Overdue since 03 /2022

WP	WG	Due To	DAYS	Y	Responsible	Task
CC	CC1 M10	30.03.22	●	-69	MPI	Dynamic lake model successfully integrated into the MPI-ESM1 PalMod setup and coupled to the atmosphere
CC	CC1 M5	30.03.22	●	-69	CAU	Realization of modified, advection-adapted parareal method for FESOM, documentation of convergence and efficiency results
CC	CC1 M6	30.03.22	●	-69	CAU	Asymptotic method realized and evaluated; Software, documentation of convergence and efficiency results
CC	CC1 M7	30.03.22	●	-69	CAU	Micro-macro parareal version running for ocean component, documentation of convergence and efficiency results
CC	CC2 M15	30.03.22	●	-69	UHD, Uni Bonn	Final plugins from SP2/SP3 integrated in the toolbox
CC	CC2 M18	30.03.22	●	-69	GEOMAR	Volcanic forcing data files constructed and tested
WG1	WP1.2 M2	30.03.22	●	-69	AWI, Marum, MPI	Analysis of ice sheet stability in ice sheet - solid earth simulations
WG1	WP1.3 M2	30.03.22	●	-69	AWI, Marum, MPI, PIK	Analysis on the effect of ice sheet initialisation on glacial inception; re-tuning of model parameters
WG1	WP1.3 M3	30.03.22	●	-69	AWI, Marum, MPI, PIK	Investigation of the individual roles of greenhouse gas and orbital forcing
WG2	WP2.2 M6	30.03.22	●	-69	UNI HH	Manuscript about the role of shelf weathering on land-ocean biogeochemical matter fluxes
WG3	WP3.1 D2	30.03.22	●	-69	Marum	Extended marine paleoclimate data synthesis
WG3	WP3.1 M2	30.03.22	●	-69	Marum	Updated marine proxy synthesis that includes temperature reconstructions without benthic δ18O chro
WG3	WP3.2 D2	30.03.22	●	-69	GFZ	Update of the PALIM data-base to integrate chronological links to the marine data-base
WG3	WP3.2 M1	30.03.22	●	-69	GFZ	Synchronization of lacustrine and marine data-bases
WG3	WP3.2 M3	30.03.22	●	-69	GFZ	Improved proxy-system models for key climate proxies including varve thickness data
WG3	WP3.2 M8	30.03.22	●	-69	MUN	Revised calibrated distribution of last glacial cycle ice sheet chronologies and associated 1D regional Earth models
WG3	WP3.3 M2	30.03.22	●	-69	Marum, AWI-B	Transient simulations of the Holocene and last glacial inception set up and ready to run
CC	WS CC2 -3	30.03.22	●	-69	DKRZ, HZG, UHD	Workshop on model-data comparison for PalMod phase II simulations and paleodata syntheses in cooperation with WGs 1-3

If you have to shift a milestones or deliverables, please contact me (kfieg@geomar.de)