The 3rd Deep-Time Model Intercomparison Project
DeepMIP Conference

M Shed & University of Bristol
Bristol, UK

Wednesday 4th July – Friday 6th July 2018

This document summarises the main outcomes of the 3rd DeepMIP meeting held in Bristol, July 2018.

Model Outcomes

List of papers to come out that are based on the DeepMIP model ensemble and data (Lead Contact):

Papers to be submitted prior to **December 2019** in time for IPCC deadline:
*) Model ensemble - large scale features and model-model comparison (Lunt)
*) Final DeepMIP data compilation - include all existing datasets and any new ones generated by then. (?)
*) Model-data comparison - temperature (Pancost)
*) Model-data comparison - precip (?)

Papers to be submitted when ready :
*) Ocean circulation (Zhang, Coxall, de Boer)
*) Antarctic climate (Baatsen, Gasson)

*) Monsoons (WIlliams)
*) Regional precip (Otto-Bliesner)
*) Clouds and energy balance (Zhu, Feng, Huber?)
*) ENSO and modes of variability (?)
*) Extremes (?)
*) + analysis of sensitivity studies (see below)

Model sensitivity studies:
We will take the approach of trying to coordinate so that we cover as many sensitivities as possible, rather than all groups focussing on one sensitivity. However, ideally two models would tackle each sensitivity, if possible.
Interesting sensitivities that people are keen to carry out include:
1x CO2
orbital configuration
aerosols
gateways
vegetation
ocean mixing

We will open a cross-journal (GMD+CP) EGU Special Issue for DeepMIP.
Each model will describe their experiment and a very general account of the results in a GMD paper:
The "recipe" for this paper is:

(1) Introduction
(2)Model description, including e.g. resolution, timestep, clouds, ozone, ocean vertical mixing,
(3)Experimental design – deviations from standard, e.g. initial condition, topography, bathymetry, land-sea mask (gateways)
(4)Spinup – timeseries of SST, salinity, temperature at ocean depths, Gregory Plot
(5)Results (100 year averages) – minimum of DJF, JJA, ANN SAT, Precip, SSS, + global overturning streamfunction, mixed layer depth, seaice.
+Meridional heat flux in atmosphere, and implied ocean heat flux
+Hadley circulation (zonal mean wind - height vs latitude)
+Clouds (height vs latitude)
+Table of main global mean quantities, including modern values
(6)Any other information, e.g. sensitivity studies
(7)Supp info – netcdf file of key variables and figures of additional fields if desired, e.g. barotropic stream function

Proxy Outcomes

To get the final stages of the Proxy Data Paper process complete we plan to work closely with the previously identified lead people for each section, with some minor adjustments based on the meeting last week. We hope these people will do the final edits to their section text and also lead the data compilation for their proxy where necessary (see details below). These people and responsibilities are listed below; if this is a problem for anyone, please email Tom Dunkley Jones. Based on the Bristol meeting, we've also agreed the following timetable to achieve submission by the end of August.

At the bottom of this message is a current list of authors for checking. Authorship will be based on having made a contribution to the paper, as judged by Chris Hollis, Dan Lunt and group leads. We aim to send around the updated “pre-Bristol” version of the text to the list along with a summary of outstanding issues.

Any other comments or questions about the process please send to Tom Dunkley-Jones, copied to Chris Hollis and Dan Lunt.

At this stage, any follow up questions or comments about the science should go to section leads, so that they can integrate comments.

TEXT

w/c 16th July

TDJ to send out the pre-Bristol text and figures along with outstanding issues to be addressed.

By Tuesday 31st July - Section Leads to provide final revised versions of text and Figures to TDJ

Section leads to check current text, comments and outstanding issues list and produce a final agreed text. Where necessary to resolve outstanding issues / request extra material from individual contributors. Make efforts to reach a consensus position within their groups.

By Friday 10th August - TDJ to circulate final version of the text for proof reading to whole authorship

Text for checking / final outstanding issues.

By Friday 24th August - final proof reading edits to TDJ

Any final comments / outstanding issues or errors to TDJ. This is not expected to include points of substance, but if these arise, final editorial decisions will be made by Hollis, Lunt, Zachos, Lear, Huber, Dunkley Jones, in consultation with Section leads as necessary.

31ST AUGUST TARGET SUBMISSION DATE TO GMD

DATA - DeepMIP data version 1.0

To include:

SAT brGDGTs (Naafs)

SST:

Mg/Ca & Clumped (Evans 18)

TEX (Inglis / Cramwinckel / Tierney)

ð18O (Hollis / Edgar / Kozdon)

Other terrestrial datasets: not included, pending work of Strother & Salzmann for publication 2019. Reference back to Huber & Caballero, 2011.

By Friday 20th July - Outline data template from TDJ to Section leads

By Tuesday 7th August - draft data tables to TDJ

By Friday 10th August - outstanding issues from TDJ to Section leads

By Friday 24th August - final versions to TDJ

By Friday 31st August - submission of DeepMIP version 1.0 as SI to GMD

SECTION LEADS:

Chronostratigraphy: Dunkley Jones, Lauretano, Edgar

Oxygen isotopes: Edgar, Zachos, Kozdon

Mg/Ca: Evans, Lear, Kozdon, Edgar

Clumped isotopes: Tripati, Evans

GDGTs: Inglis, Pancost

brGDGTs (terrestrial): Naafs

Leaf morphology: Kennedy

Nearest Living Relative: Salzmann

Boron isotopes: Foster

Marine Phytoplankton pCO2: Eley, Frieling, Pancost, Naafs

Stomata: Royer

Data management: Palike

Author List:

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Huber,
and DeepMIP scientists.