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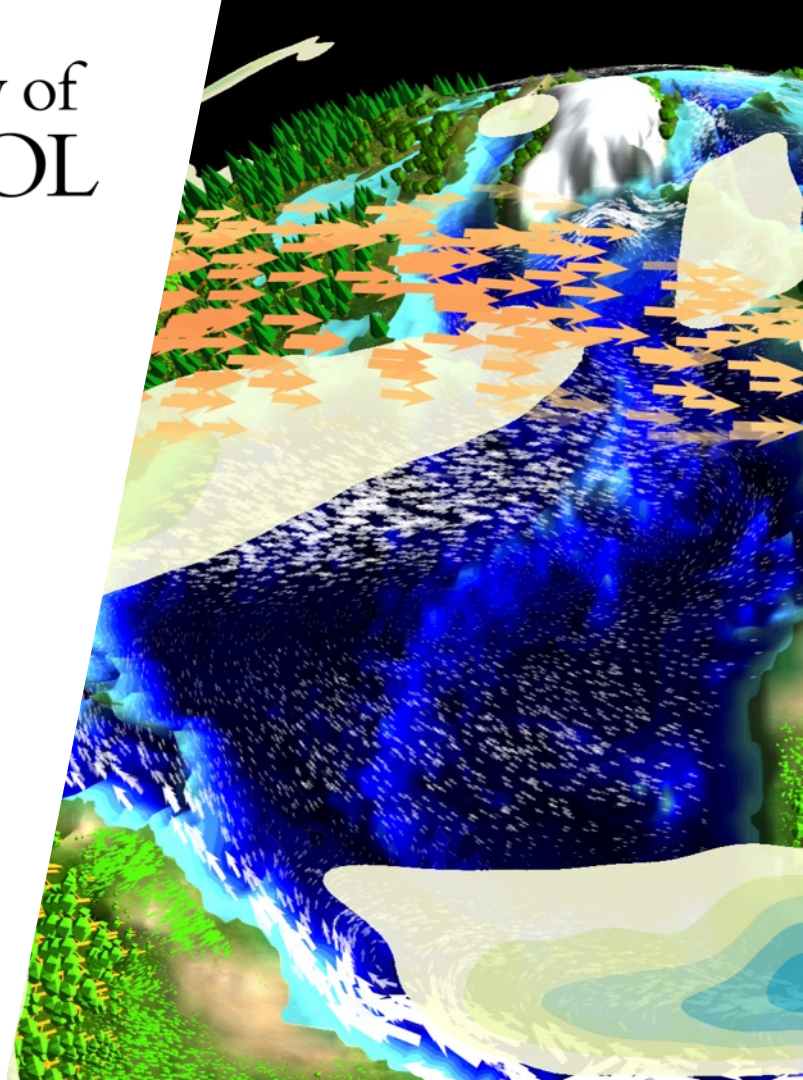
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540 million years of climate data at your fingertips

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Paul Valdes, Zak Duggan, Patrick Lee, Jakub
Navratil, Ikenna Offokansi, and Matthew Swann

This project has been supported by the Jean Golding Institute for data science and data-intensive research at the University of Bristol.

25/05/22 | EGU22 | SSP2.1 | sebastian.steinig@bristol.ac.uk



Motivation: growing amount of model data

Deep ocean temperatures through time

Paul J. Valdes^{1,✉}, Christopher R. Scotese², and Daniel J. Lunt¹

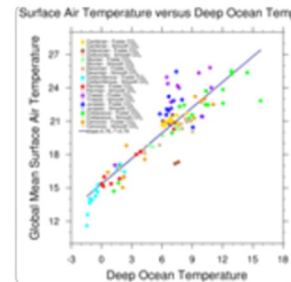
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✉Invited contribution by Paul J. Valdes, recipient of the EGU Milutin Milankovic Medal 2015.

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Received: 15 Jun 2020 – Discussion started: 06 Jul 2020 – Revised: 08 May 2021 – Accepted: 10 May 2021 – Published: 19 Jul 2021



“... we performed a **series of 109 climate model simulations** using a unique set of paleogeographical reconstructions covering the entire Phanerozoic at the stage level.”

“In total, we performed almost **1 million years of model simulation** ...”

MIP Era

☒ CMIP6 (392)

Activity

Model Cohort

Product

Source ID

☒ HadGEM3-GC31-LL (392)

Institution ID

Source Type

Nominal Resolution

Experiment ID

☒ piControl (392)

Sub-Experiment

Variant Label

Grid Label

Table ID

Frequency

Realm

Variable

CF Standard Name

Data Node

WARNING: Not all models include a variant "r11p1f1", and across models, identical values of variant_label do not imply identical variants! To learn which forcing datasets were used in each variant, please check modeling group publications and documentation provided through ES-DOC.

CMIP6 project data downloads are unrestricted. Downloads should be performed with the -s option to a wget script without the need to login. When using this method for download, ensure you are not using additional options, eg. -s and -H should never be combined.

For more information about CMIP6 data please consult this guide: <https://pcmdi.llnl.gov/CMIP6/Guide/dataUsers.html>

Please try our updated ESGF web application (named "Metagrid"), now undergoing beta testing. For this test release we are reaching out for help from users in the community to report any issues they encounter with the application. The beta-test web application can be found at the following site: <https://aims2.llnl.gov/metagrid/>
Please see the following page for more information including a FAQ: <https://esgf.github.io/esgf-user-support/metagrid.html>

Enter Text:

Display results per page [\[More Search Options \]](#)

☐ Show All Replicas ☐ Show All Versions ☐ Search Local Node Only (Including All Replicas)

Search Constraints: ☒ CMIP6 ☒ HadGEM3-GC31-LL ☒ piControl

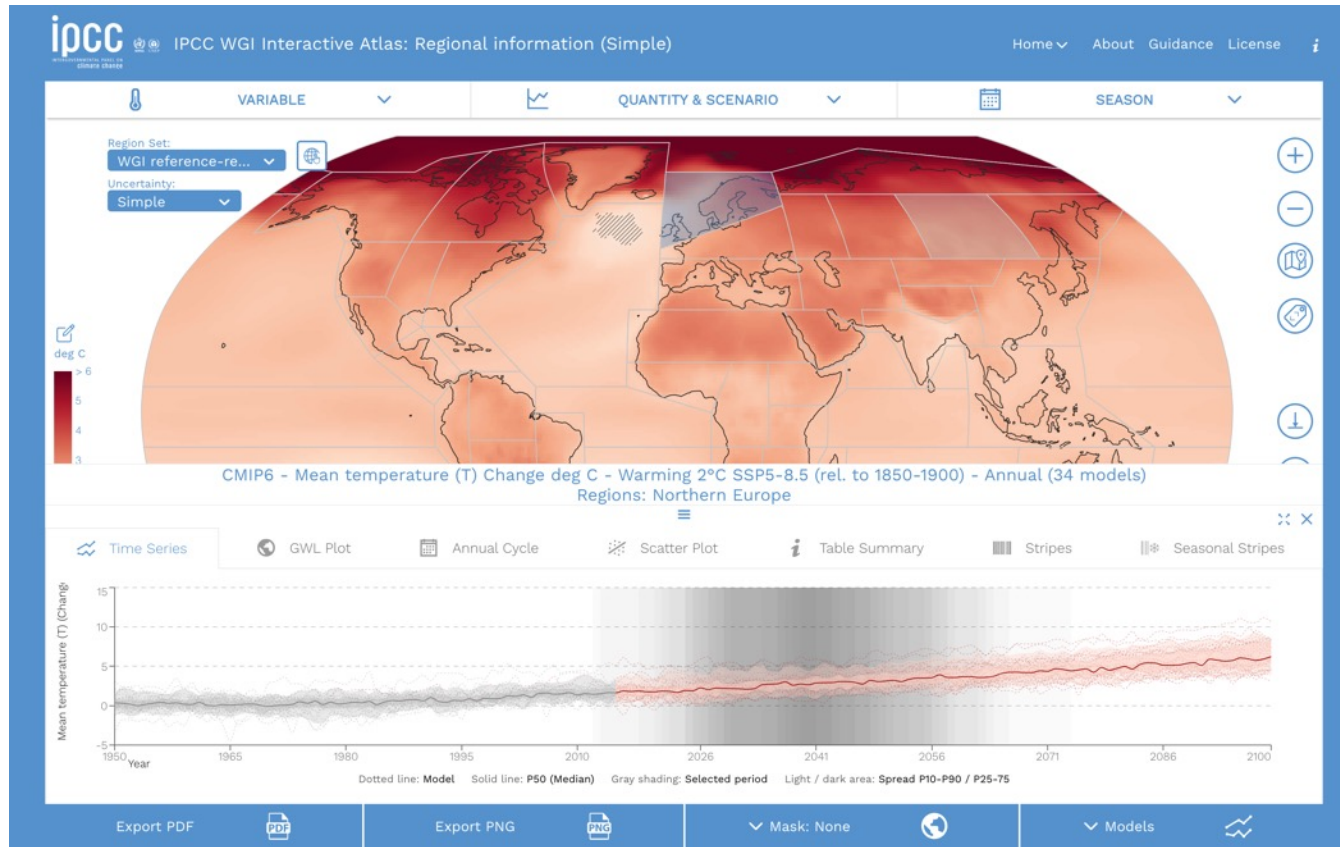
Total Number of Results: 392

-1- 2 3 4 5 6 Next >>

Please login to add search results to your Data Cart

Expert Users: you may display the search URL and return results as XML or return results as JSON

1. CMIP6.CMIP.MOHC.HadGEM3-GC31-LL.piControl.r11p1f1.AERday.zg500.gn
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Version: 20190628
Total Number of Files (for all variables): 5
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2. CMIP6.CMIP.MOHC.HadGEM3-GC31-LL.piControl.r11p1f1.AERmon.abs550aer.gn
Data Node: esgf.ceda.ac.uk
Version: 20211103
Total Number of Files (for all variables): 20
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3. CMIP6.CMIP.MOHC.HadGEM3-GC31-LL.piControl.r11p1f1.AERmon.bldep.gn
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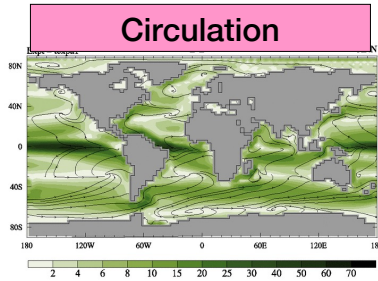
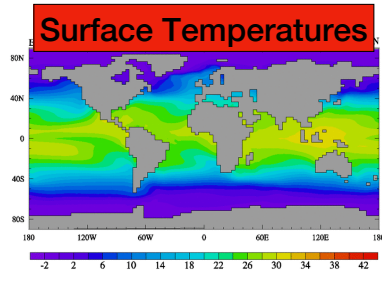
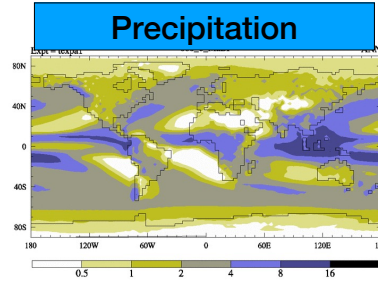
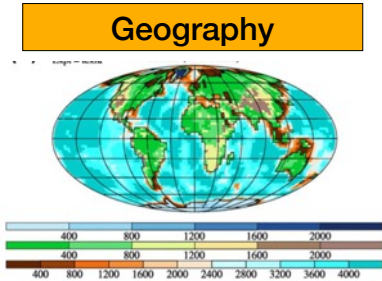




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Valdes et al (2021)

credit: acegif.com

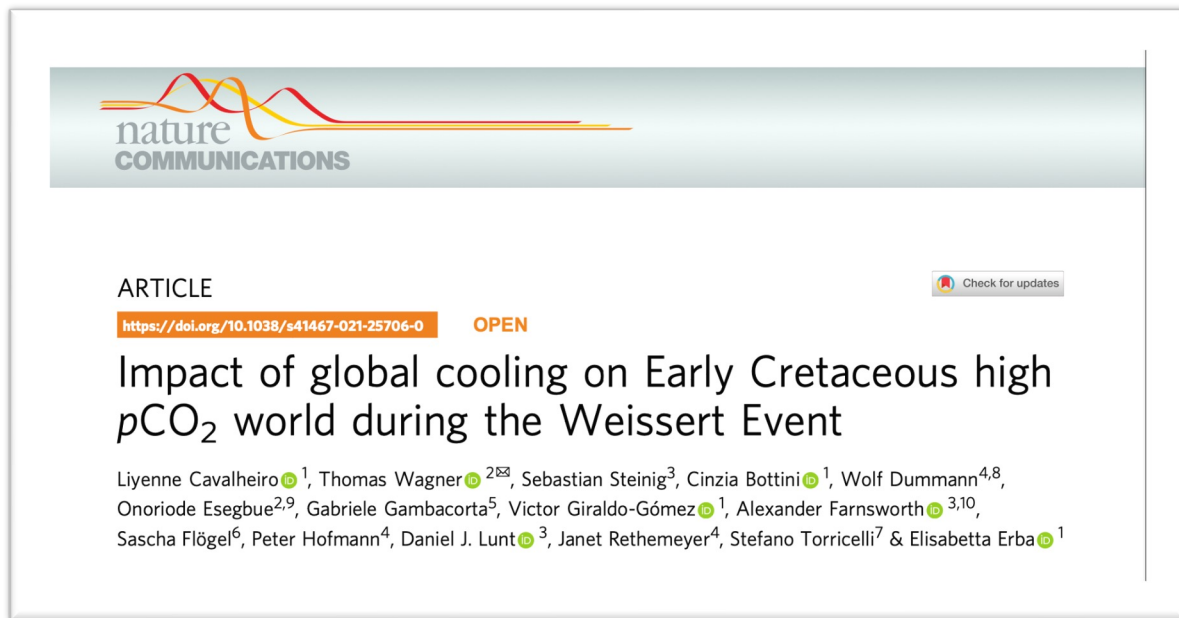


x 109
→
time
slices





use case: model-data comparison



Valanginian proxy compilation

Age (Ma), modern lat, modern lon

136.4, 35, -70

136.4, 28, -75

136.4, -20, 110

136.4, -70, -12

136.4, 38, -2

136.4, 54, 0

136.4, 64, 60

136.4, 71, 97

136.4, 44, 5

136.4, 52, 20

136.4, -50, -72

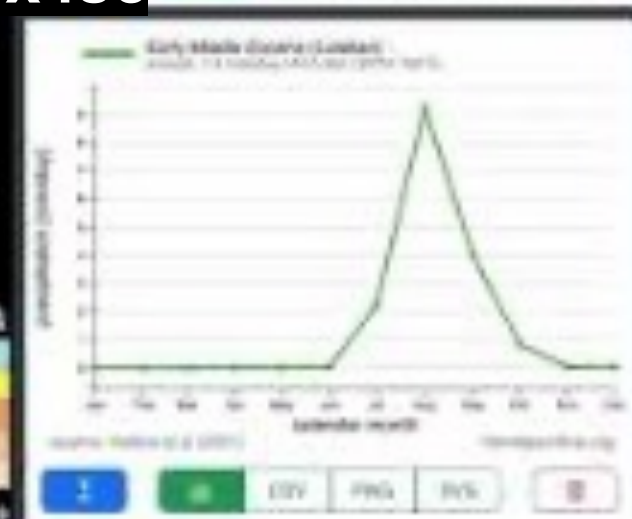
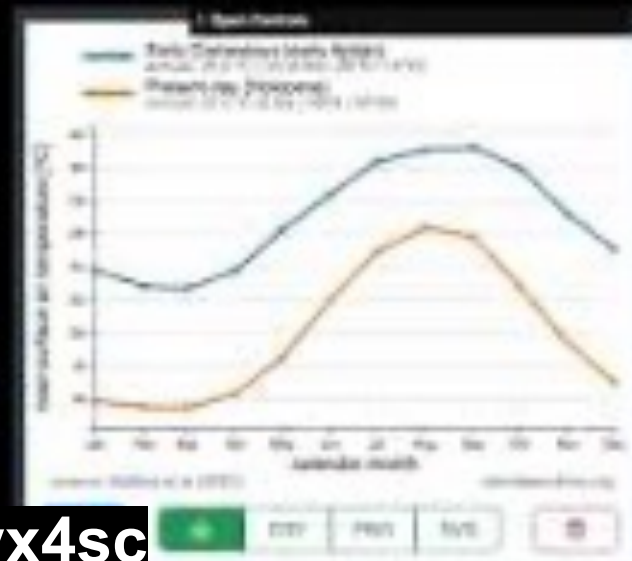
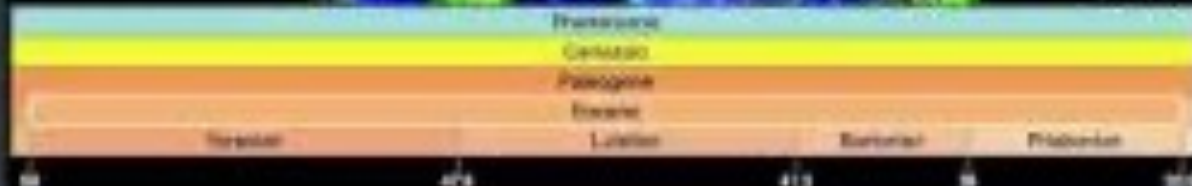
136.4, 78, 16

136.4, -15, 117

136.4, 44, -5



<https://youtu.be/0gGqKryx4sc>



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summary:

- Google Earth for (paleo-)climate data
- global coverage for last 540 Ma at the stage level (Valdes et al, 2021)
- disclaimer: treat results with care -> please report bugs and ideas!

outlook:

- roadmap to publish stable, open-source version this year
- open platform to other models and data products

Thank You!

