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ALFRED-WEGENER-INSTITUT
HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

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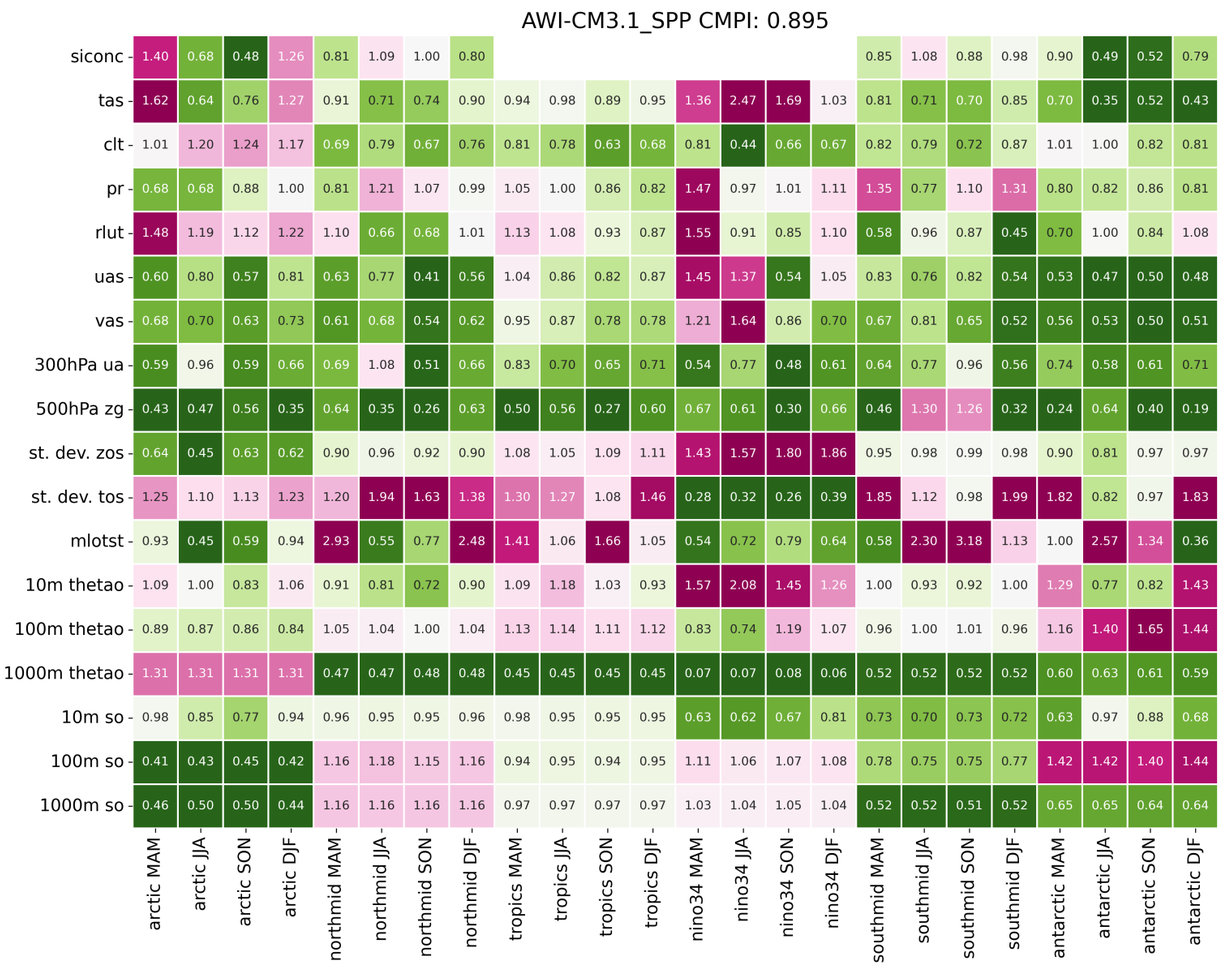
Warming Climates across time scales with AWI-ESM3

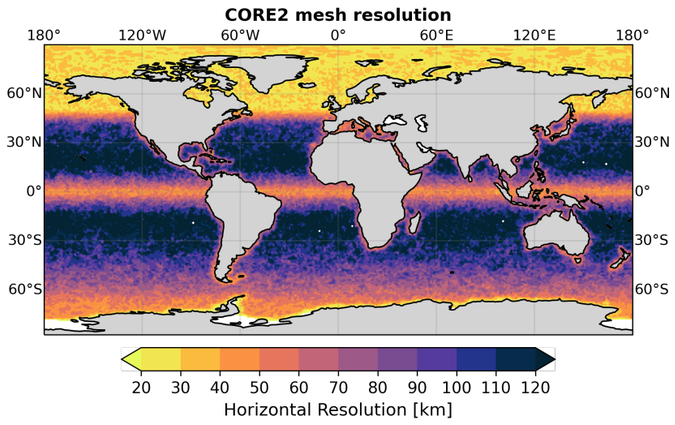
Motivation

- Current AWI-CM3 model performing better compared to CMIP6 ensemble (Streffing et al., 2022)
- Development of our Earth System Model
  - Dynamic Vegetation
  - Improved ocean model version
  - Compatible with warming climates setup

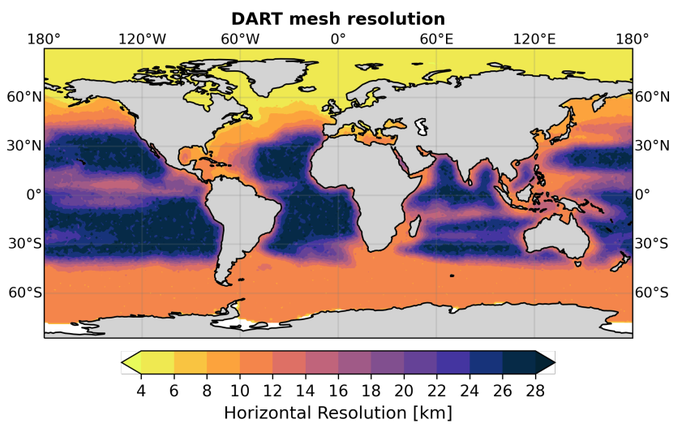


Model Setup

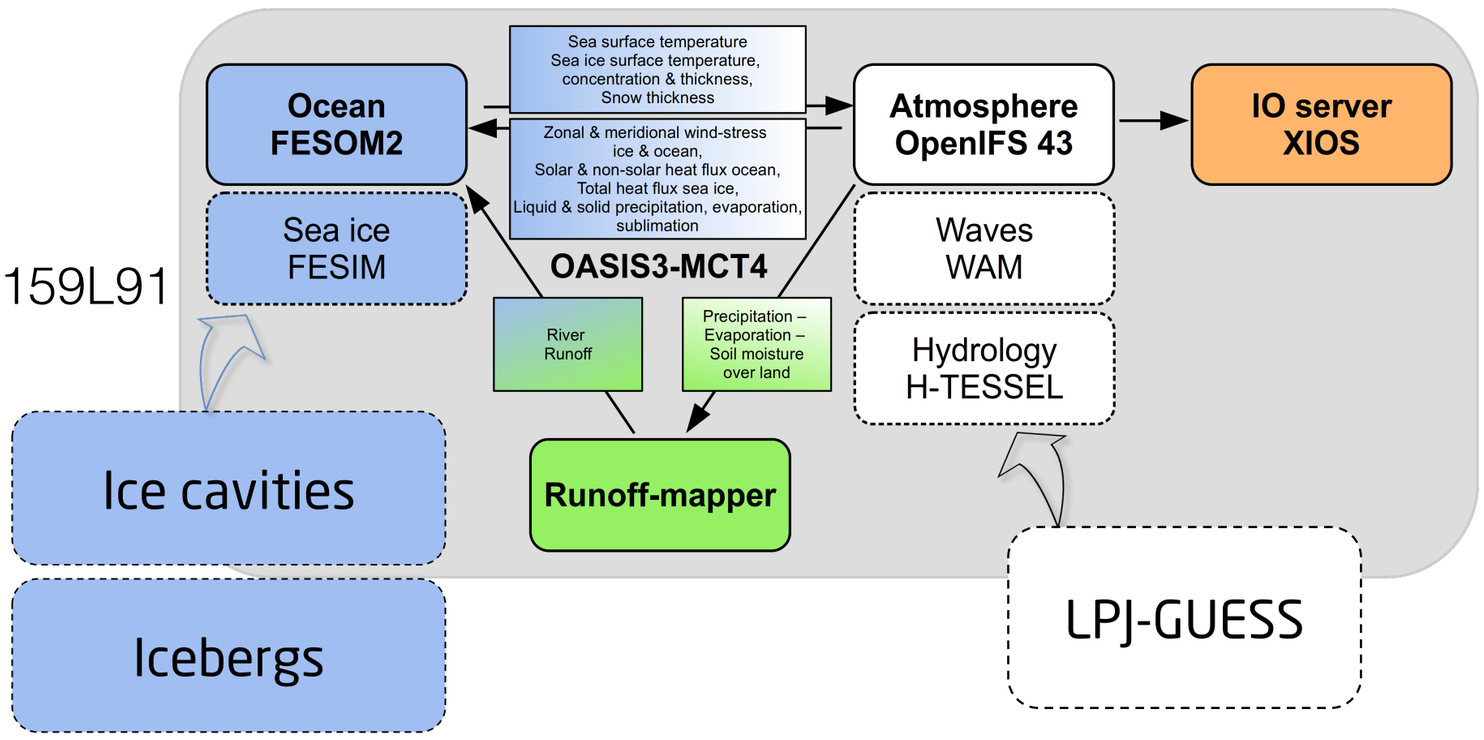
- FESOM2.5 ocean + OpenIFS 43
  - Mesh CORE II+TCo95L91



  - Future setup: Mesh DART+TCo159L91



Improvements



Experiments

1. Pre-Industrial (CMIP6 DECK)
2. Mid-Holocene, Last Interglacial, Last Glacial Maximum and mid-Pliocene experiments (PMIP4, PlioMIP2)
3. Historical and future SSP scenarios (CMIP6 DECK and ScenarioMIP)
4. Higher resolution simulations

References
Streffing, J.,, Sidorenko, D., Semmler, T., et al. (2022) AWI-CM3 coupled climate model: Description and evaluation experiments for a prototype post-CMIP6 model. Geoscientific Model Development, 15:6399-6427
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