RCEMIP-II MODEL DOCUMENTATION FORM

Please fill out the below with the relevant information for the model simulations you are submitting to RCEMIP-II. If you are submitting multiple sets of simulations from multiple versions or configurations of a model, please fill out a documentation form for each.

Your information
Your Name: Walter Hannah
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Model information
Model Name/Version: E3SM-MMF version 2
Model Name Abbreviation ($MDL used in upload to DKRZ Cloud): E3SM-MMF
Citation for model: https://doi.org/10.1029/2019MS001863

Model dynamical core
Type of grid (cartesian, spherical): Cube-sphere
Dynamical core (e.g. finite volume): Spectral Element with Gaussian-Legendre-Lobatto (GLL) quadrature (np4)
Time step: 5-min for global dynamics (20-min for physics)

Grid information
number of grid points: 21,600
horizontal grid spacing: 166.5 km
Number of vertical levels: 60 GCM / 50 CRM
Vertical levels: Hybrid pressure / terrain following
Sponge layer: 3 levels in GCM / 1/3 of CRM levels

Physics packages (fill out all applicable)
Radiation scheme: RRTMGP
Microphysics scheme: single moment scheme from SAM (within embedded CRM)
Boundary layer scheme: based on Holtslag and Boville, 1991
Convection scheme: None (explicitly simulated by embedded CRM)
Sub-grid scale turbulence scheme: Diagnostic Smagorinsky (within embedded CRM)
Other: _____

Other model-specific settings or parameters (beyond the specified RCEMIP parameters):
Convective momentum transport appraoch of Yang et al. (2022) https://doi.org/10.1029/2022MS003206
CRM variance transport scheme of Hannah and PRessel (2022) https://doi.org/10.5194/gmd-15-8999-2022