Version 2 of E3SM Atmosphere Model (EAM) New Feature Integration and Tuning

Xue Zheng1, Jean-Christophe Golaz1, Kai Zhang2, Wuyin Lin3, Brian Griffin4, Vince E. Larson4, Qi Tang1,

1Lawrence Livermore National Laboratory, Livermore, CA

2 Pacific Northwest National Laboratory, Richland, WA 99352

3 Brookhaven National Laboratory, Upton, NY 11973

4 Department of Mathematical Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI 53201

Several new atmosphere features and alternate model tunings have been developed after EAMv1. Taken separately, each of these features and alternate tunings improves upon specific aspect compared to EAMv1. The model, however, has never been evaluated with multiple new features and tunings together before.

To integrate, evaluate and tune version 2 of EAM, we conducted a set of atmosphere-only simulations along with several coupled simulations to evaluate the candidate new features and tuning strategies. The goal of integration and tuning is to optimize the model performance on the global and regional climatology, cloud feedback and aerosol-related forcing, as well as the computational performance. This presentation will summarize the evolution of EAMv2 developmental versions and the major impacts of each selected new features on the modeled climate.

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