**MPAS-Atmosphere in SIMA and CESM-CAM: Preliminary results**

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As part of the System for Integrated Modeling of the Atmosphere (SIMA), the Model for Prediction Across Scales-Atmosphere (MPAS-A) dynamical core has been implemented as an external component in the Community Atmosphere Model (CAM) within the Community Earth System Model (CESM). One SIMA goal is to provide nonhydrostatic (explicit convection) atmosphere simulation capabilities in an earth-system model, and the MPAS-A implementation is central to that goal. We will present results from atmospheric testing, in both idealized-flow applications and full physics real-earth applications, showing that MPAS-A has similar efficiency and accuracy as the other dynamical cores in CAM, including the spectral element (SE), finite volume (FV), and finite-volume 3 (FV3) cores. NWP applications utilize much higher resolution than typically used in CESM climate applications. We will present preliminary results of high resolution simulations using CAM6 physics that are part of our effort to enable convection-permitting applications in a coupled earth-system model. An initial release of MPAS-A capability in CESM/CAM, as part of the SIMA project, is expected to occur later this year.