**Evaluating the climate of coupling SHOC with ZM**

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The Simple High-Order Closure (SHOC) scheme is a shallow convection/turbulence scheme being used within the 3-km SCREAM model. As part of the Atmospheric Physics NGD task, we evaluate the representation of climate and cloud in a coarser (ne30) version of the E3SM model that combines SHOC, the deep-convection scheme of Zhang-MacFarlane (ZM), and microphysics scheme of P3. Using the SCREAM codebase, we evaluate the ne30 (1° x 1°) model’s ability to capture the mean state climate, as well as its ability to capture variability (diurnal cycle, seasonal cycle, and precipitation intermittency). Sensitivity tests are also conducted to examine the impact of various components and explore how parameter tunings can impact global and local scale climate features.