

One of the exciting features of the E3SM is its ability to use Regionally Refined Meshes (RRMs) in the MPAS-based ocean and sea ice models, as well as in the atmosphere. In preparation for the version 2 goal of performing coupled climate simulations with RRM's focussed on North America we have configured and tested several different designs for the ocean/sea ice mesh as potential candidates for the final production setup. All have enhanced resolution around the coastal regions, but the minimum cell size, transition regions, and total area have all been varied to help assess how to best allocate grid cells for maximum desired effect. We will describe the design criteria for several prototypes, and compared simulated results with the standard low resolution grid used for E3SM version 1.