

# An initial analysis of a North Atlantic configuration of the prismatic version of FEOM

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## **Abstract**

A new prismatic version of a 3D Finite Element primitive-equation Ocean Model (FEOM) is used for the study of North Atlantic ( $98^{\circ}\text{W}$ -  $37^{\circ}\text{E}$  and  $0^{\circ}$  -  $71^{\circ}\text{N}$ ). The model was developed at the Alfred Wegner Institute for Polar and Marine Research (AWI), Germany. The Present version has a triangular unstructured horizontal mesh, refined in regions of steep topography with prismatic geopotential vertical levels compared to the older version using tetrahedral partitioning in the vertical. Horizontal resolution along longitudinal direction varies from  $0.001^{\circ}$  to  $1.25^{\circ}$  and  $0.001^{\circ}$  to  $1^{\circ}$  in latitudinal direction. Resolution in vertical is fine near the surface and coarsens at depth. The model will be forced with the new CORE data set and initialized from a state of rest with mean climatological Sea Surface Temperature and Salinity from the WOA2001 data set. Here we will present the preliminary results on the circulation, hydrography and heat transport of the model, focussing on the subpolar North Atlantic and the Labrador Sea. Comparisons with observations will also be presented.