



## **FEOM, an unstructured Finite Element Ocean Model**

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Unstructured meshes in ocean modelling are adequate, when we expect strong influences from boundaries (coastlines, bottom topography). Popular examples are tidal modelling, tsunami waves and coastal applications. FEOM is currently employed at AWI in a number of applications dealing with general circulation in the North Atlantic and also on a global scale. We present our main directions of research supported with FEOM. A new development is the version of FEOM based on the prismatic (replacing tetrahedral) discretization and a time stepping concept which minimizes the use of solvers. It exists in two flavors using  $P_1 - P_1^{NC}$  and  $P_1 - P_1$  representations of sea elevation and horizontal velocity. The model supports different types of bottom including  $z$ ,  $\sigma$  and their combinations (see contribution by Q. Wang et al.). The model performance is illustrated with results from global and North Atlantic setups.