

**New climate models: Some applications of the finite element sea ice-ocean model  
FESOM**

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A Finite-Element Sea-ice Ocean circulation Model (FESOM) has been developed at AWI, which allows a regional focus through the use of unstructured grids while avoiding nesting and open boundaries. Here some recent climate-related applications of FESOM will be discussed. The focus will be on the influence of explicitly resolving certain oceanic key-processes such as open ocean convection, overflows and flows through narrow straights on the large-scale climate and its variability.