

Project gg1302- Coastal Ocean and Morphology

To provide a basis for developing climate change mitigation and adaptation strategies for coastal systems, it is necessary to predict their possible future developments. For this purpose, we apply the unstructured grid ocean models ICON-O (Korn et al. 2022) and SCHISM (Zhang et al. 2016) both coupled with the marine ecosystem model ECOSMO II (Daewel & Schrum 2013)

The SCHISM/ECOSMO II model is used for several regional studies. It is coupled with well-established sedimentation modules that help to understand and predict processes of erosion, sediment deposition and suspension up to the changes in the underwater flora. It also simulates tidally driven nutrient fluxes across the Western European continental slope and their impact on the coastal marine ecosystem.

The ICON-O/ECOSMO model is applied on a global scale. The use of highly irregular computational grids (Logemann et al. 2021, Logemann 2024) allows the simulation of the global coast with unprecedented resolution. Hydrographic and biogeochemical trends of the coastal system can thus be predicted.

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