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## The Ocean Model ICON-O as part of the Earth System Model ICON-ESM

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In the area of ocean and climate modelling the anticipated end of Moore's law has motivated efforts to formulate ocean and atmosphere models on unstructured grids. The ocean-sea-ice model ICON-O and the Earth System Model ICON-ESM of the Max-Planck Institute of Meteorology are particular examples of a new generation of ocean and earth system models. This talk provides a look behind the scenes of ICON-O's structure-preserving design. We present ocean-stand alone as well as coupled simulations that demonstrate the capabilities of the model. We outline also the emerging scientific opportunities in ocean and climate modelling that ICON-O and ICON-ESM allow to explore and report on our first steps on these new research avenues.

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**Session Classification:** Moderator: Kristian Mogensen (ECMWF)