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## Towards tackling ice-sheet ocean interaction with Finite Element Methods

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Ice sheet-ocean interaction is important to properly understand phenomena such as ice sheet melting and ocean circulation. While the long term goal of this project is to fully couple the ice and ocean in one single numerical framework, we here start by modelling the ocean. We use the full non-hydrostatic equations in order to accurately model the complex ocean dynamics near the ice sheets. As numerical method, we employ finite element methods due to their capability of representing a complex fjord geometry and locally refining the mesh in the areas which require more careful handling, and its strong mathematical foundation. This will allow to overcome classical problems such as representing a moving ice shelf in a discretized setting. We here present an example of modeled fjord circulation obtained simulating the model with the FEniCS computing platform.