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Jet Formation at the Sea Ice Edge

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Sea ice components of Global Climate Models crudely parameterise processes at the edge of the sea ice cover leading to inaccuracies in calculating the location of the sea ice edge and thus the extent of the cover. Atmospheric jets are bands of modified wind velocity that form parallel to coastlines during on land winds. A similar formation is expected over the sea ice edge and in the ocean underneath the sea ice. We have modeled the formation of these jets and the effect they have upon the Sea Ice.
We present a study of a reduced one dimensional model of the sea ice momentum balance, introducing atmospheric and oceanic jets. We present the application of jets to an idealised sea ice edge using the Los Alamos Sea Ice Model (CICE). The simulations are run on an idealised domain and show the formation of an ice jet. The jet formation is extended to a non-idealised domain by parameterising the processes into CICE.