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Numerical Simulation and Satellite Mapping of the Inshore Labrador Current

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The inshore Labrador Current is an important coastal current along the Canadian Atlantic coast. A circulation model off eastern Newfoundland has been developed, based on the Finite Volume Community Ocean Model (FVCOM). The model results are evaluated against coastal tide-gauge data, and moored current and temperature measurements. The Surface Water and Ocean Topography (SWOT) ocean simulator is used to generate simulated SWOT measurements from the ocean model results, with various instrument errors considered. After the spatial filtering of simulated SWOT measurements within each swath, the time-space optimal interpolation is able to reasonably recover the model inshore Labrador Current, the dominant coastal current in the study region.