

Abstract Submitted
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Predictability of ROMS-Ocean State Ocean Model using Information Theory¹ AAKASH SANE, BAYLOR FOX-KEMPER, Brown University, DAVID ULLMAN, CHRISTOPHER KINCAID, LEWIS ROTHSTEIN, University of Rhode Island, UNIVERSITY OF RHODE ISLAND COLLABORATION, BROWN UNIVERSITY COLLABORATION — The Ocean State Ocean Model (OSOM) is an implementation of the Regional Ocean Modeling System (ROMS) covering Rhode Island waterways which includes the Narragansett Bay, Mt. Hope Bay, and nearby regions including the shelf circulation from Long Island to Nantucket. Our focus is on modeling the physical aspects of the Bay in order to build a forecast and prediction system. Perturbed ensemble simulations with altered initial condition parameters (temperature, salinity) are combined with concepts from Information Theory to quantify the predictability of the OSOM forecast system. Predictability provides a theoretical estimate of the potential forecasting capabilities of the model in the form of prediction time scales and enhances readily estimable timescales such as the freshwater flushing timescale. The predictability of the OSOM model is around 10-40 days, varying by perturbation parameters and season.

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