Predictability of ROMS-OSOM
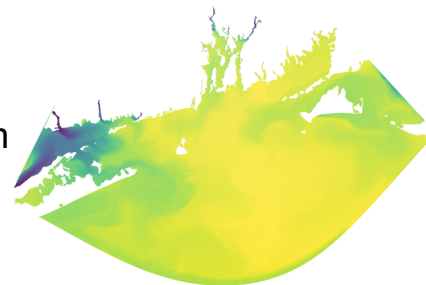## (EGU-2020)

Aakash Sane
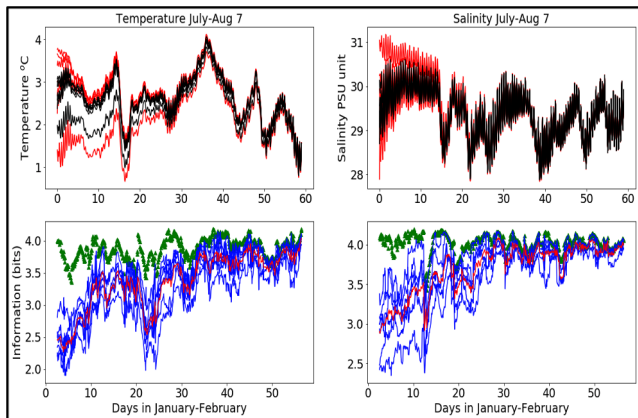Baylor Fox-Kemper
Brown University

Dave Ullman
Christopher Kincaid
Lewis Rothstein
University of Rhode Island

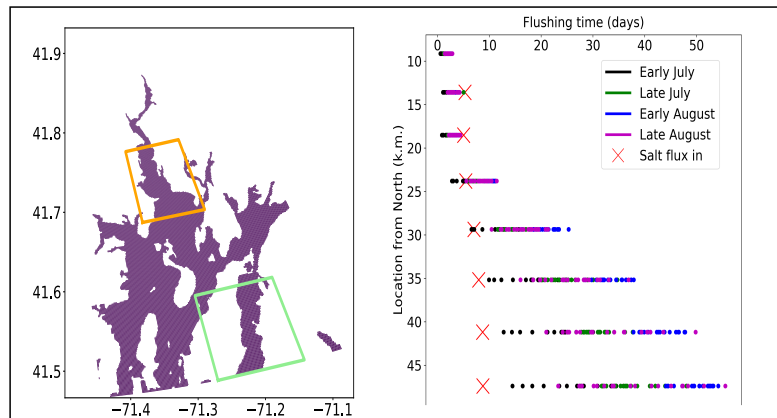Predictability: Related to forecasting model. A key question for forecast capabilities

1. What new can the model give about the system apart from climatology?
2. And how for how long? → predictability time scales, ~15-20 days

ROMS-OSOM showing surface salinity of Narragansett Bay and Rhode Island Sound.

Current work in progress: 1. Using information metrics for predictability in bio-geochemical modeling. 2. Finding intrinsic vs extrinsic variability using entropy metrics.

Top panes: temperature and salinity
Bottom panes: Mutual information blue) and Shannon entropy (green) metrics showing predictability window of 15-20 days.

Flushing time scale calculated from model output using V / f, where V is volume and f is flux. Salinity flushing time scale is about same as predictability time scale.