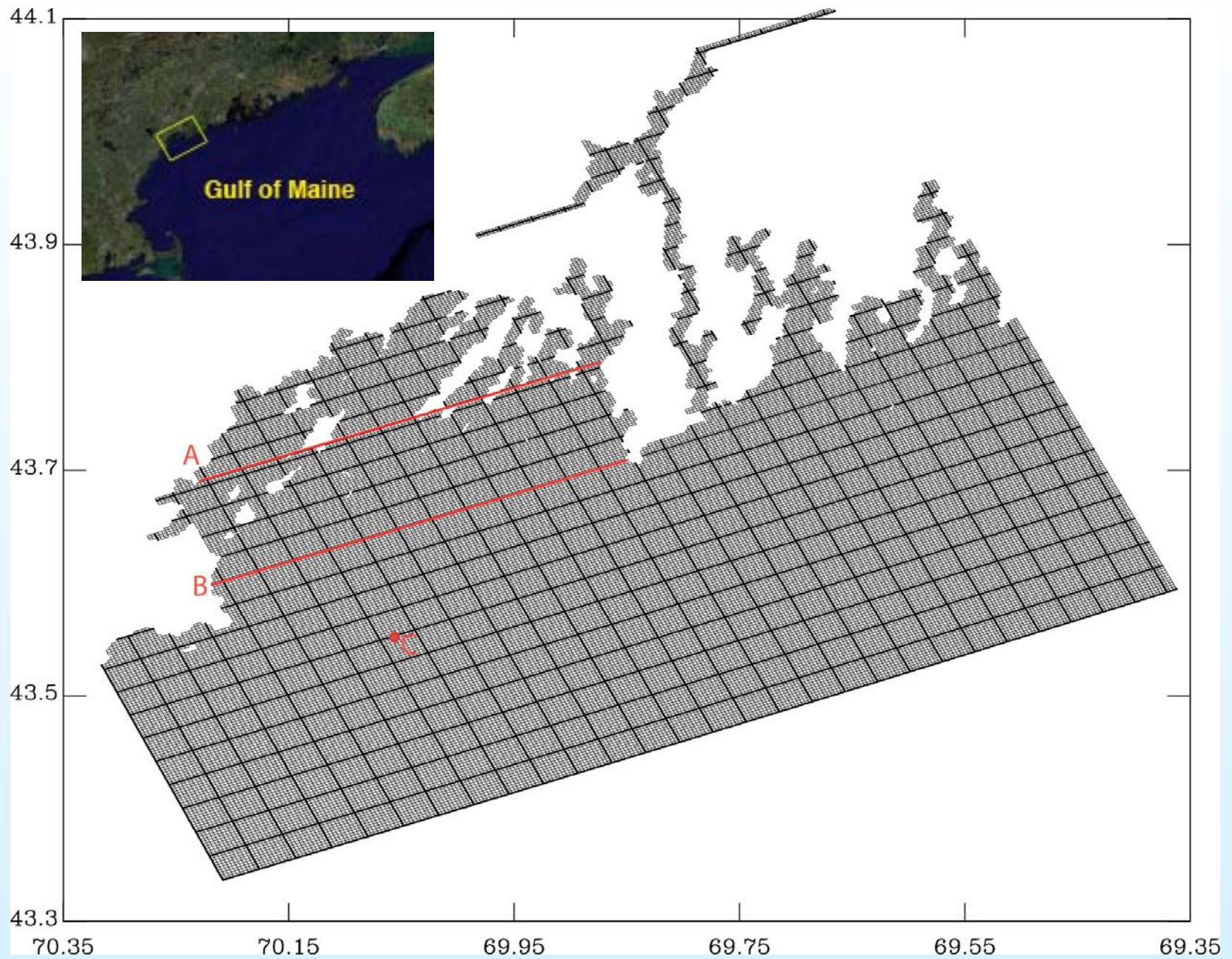


Modeling the Circulation in Casco Bay



Huijie XUE
School of Marine Sciences
University of Maine

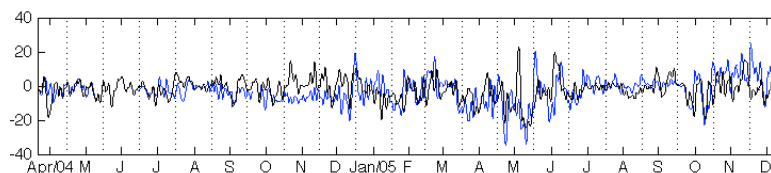
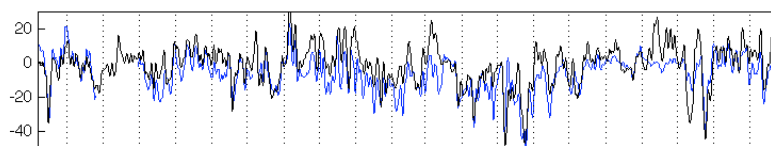
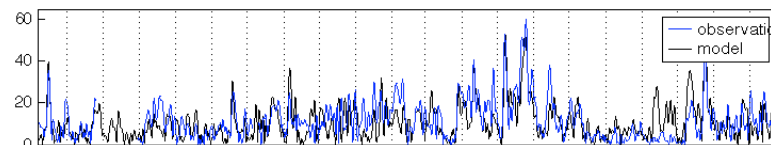
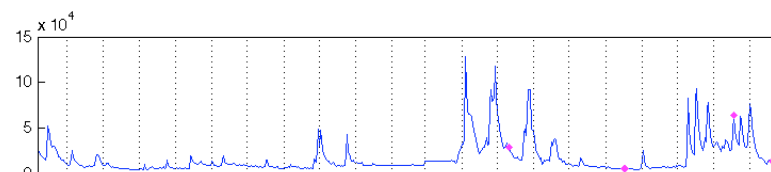
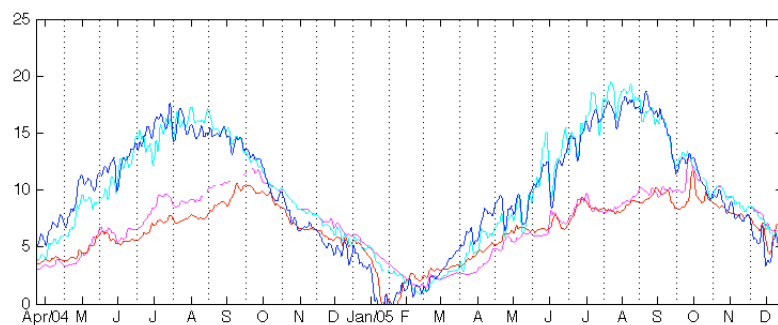
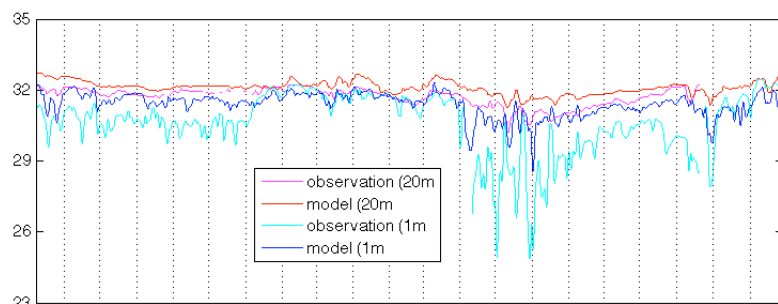
Casco Bay Circulation Modeling Workshop, May 19, 2011



MOSAC/Maine DEP/SeaGrant, NOAA, NASA



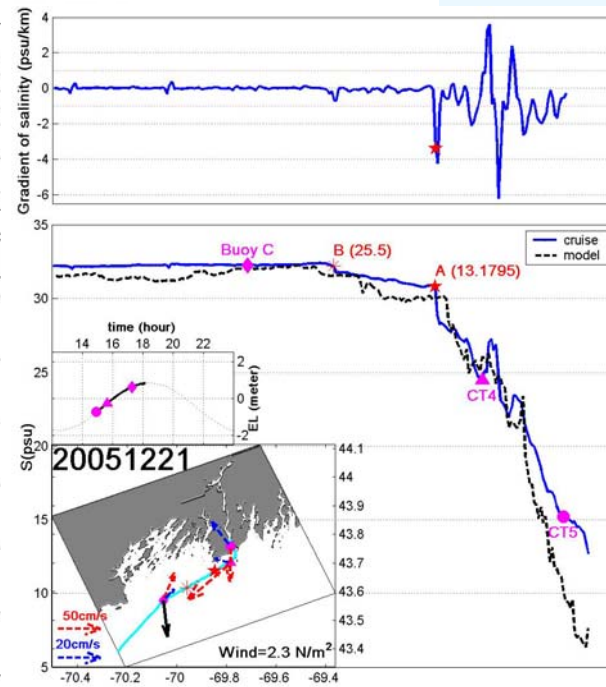
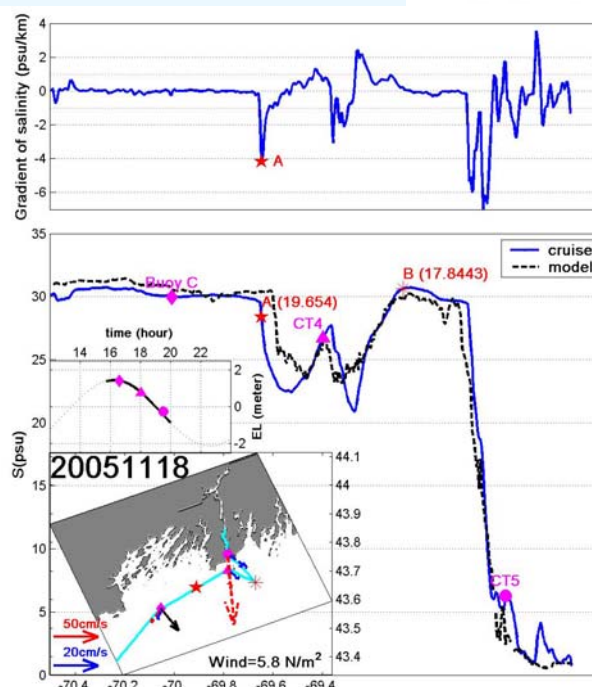
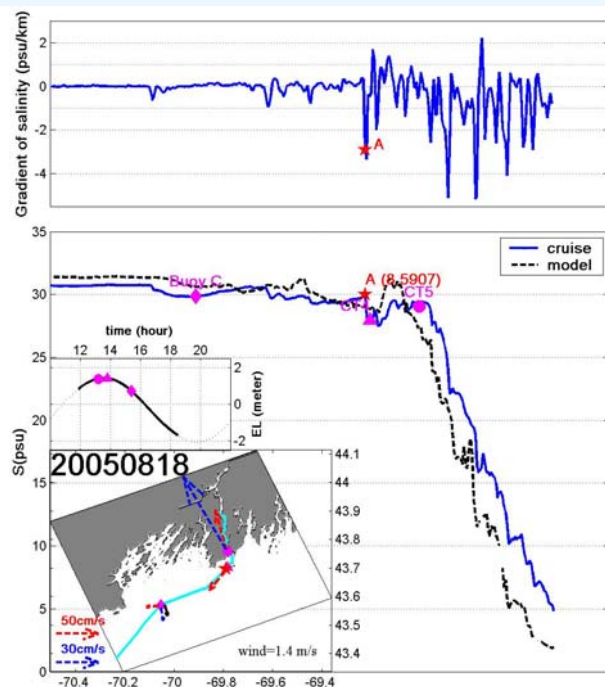
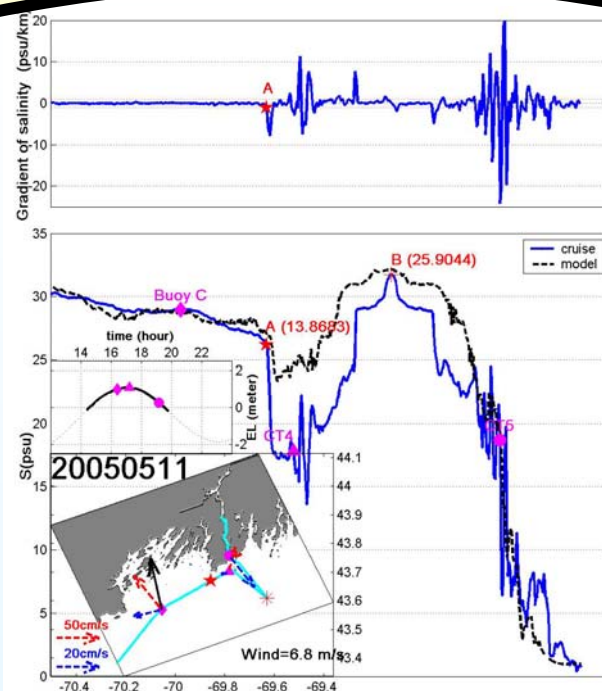
Comparison with in situ Observations at GoMOOS buoy C

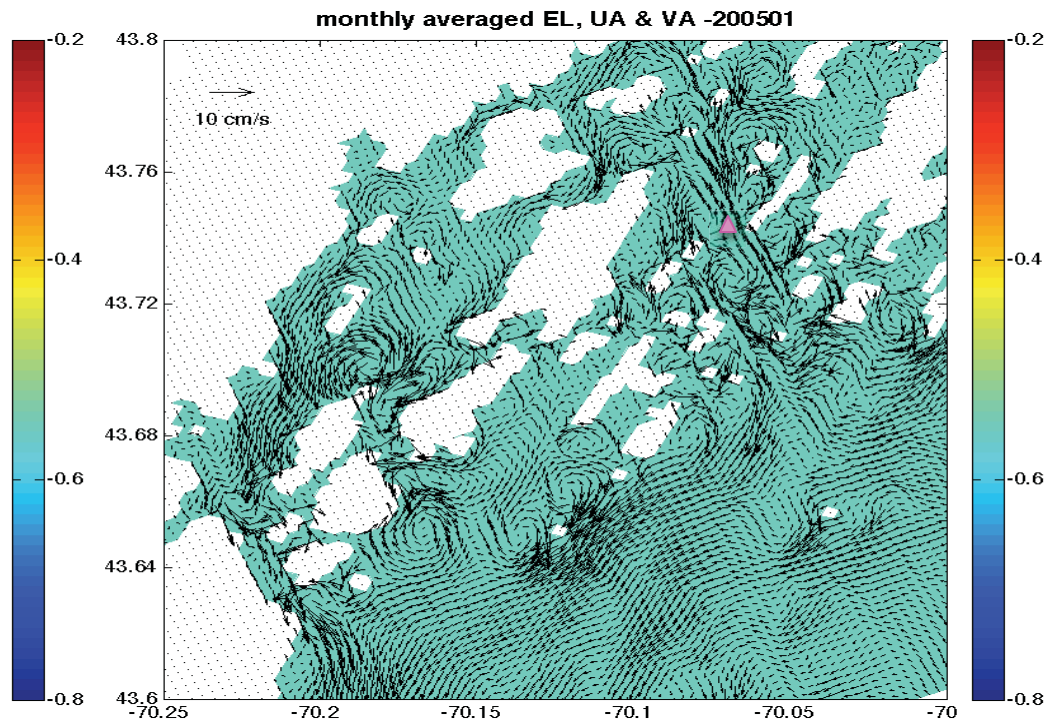
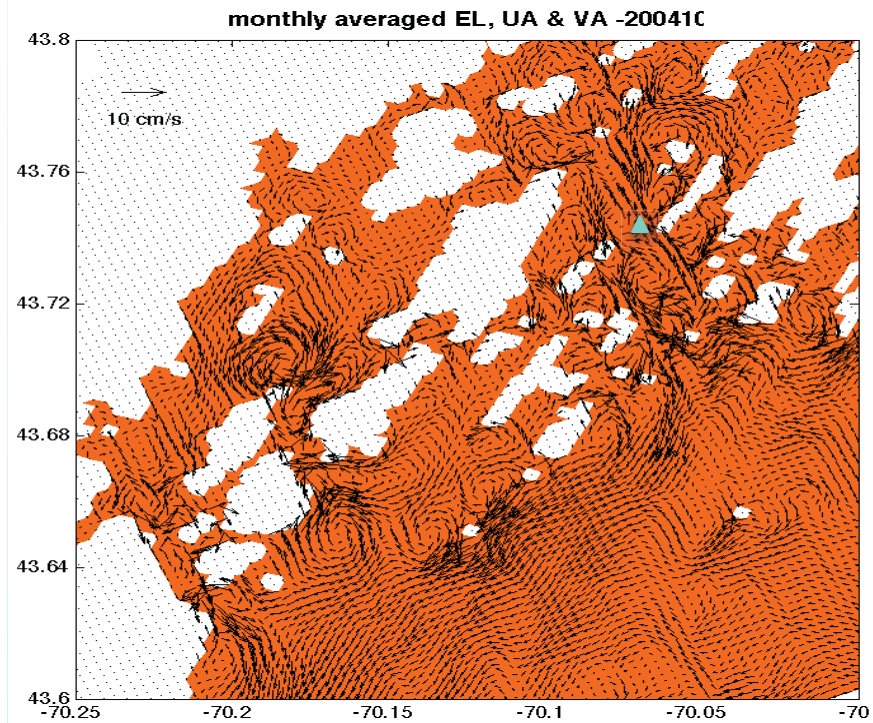
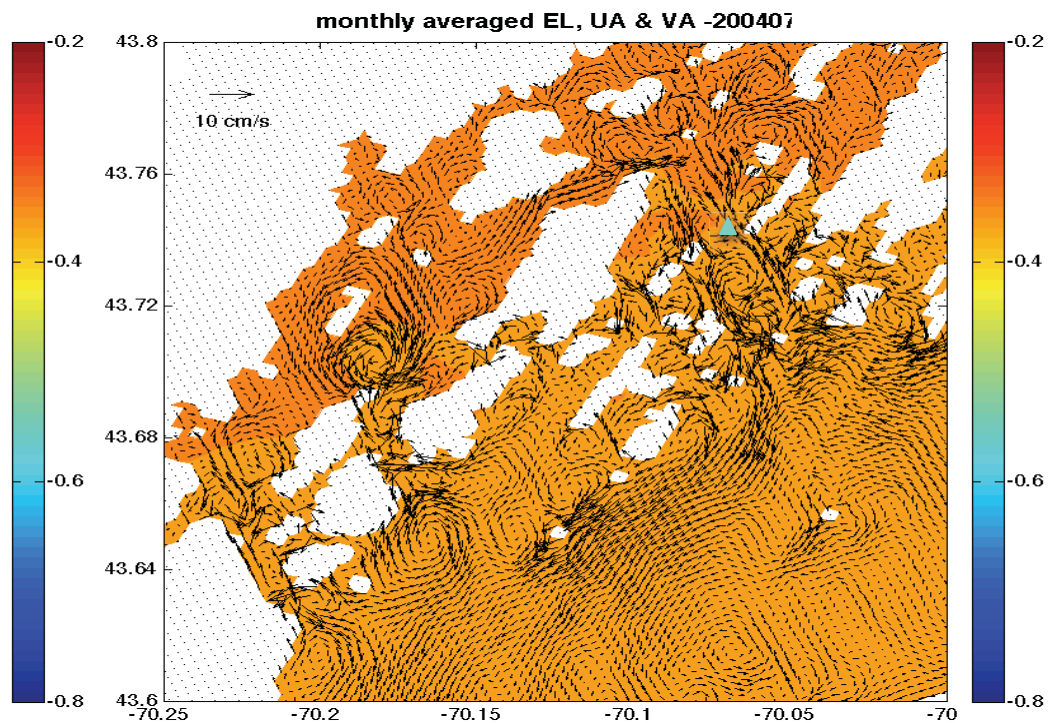
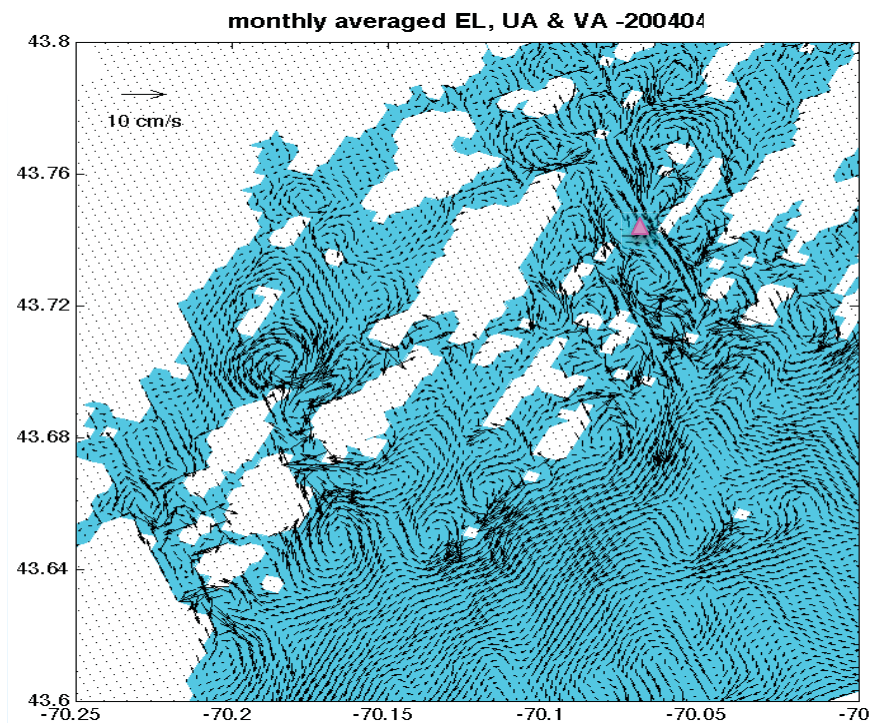


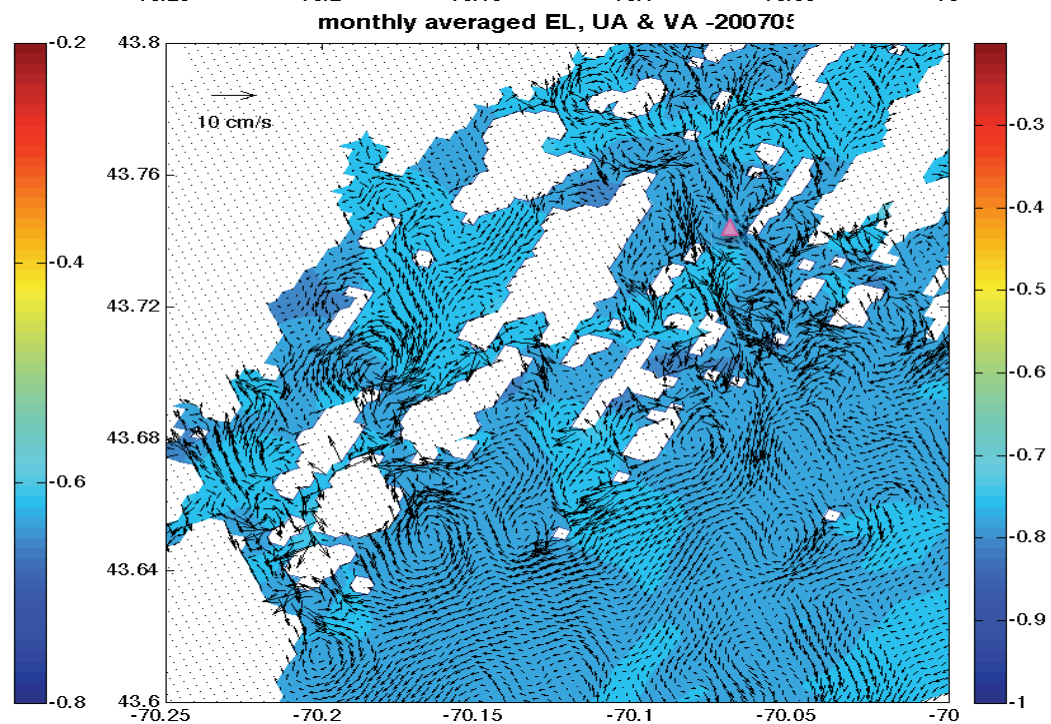
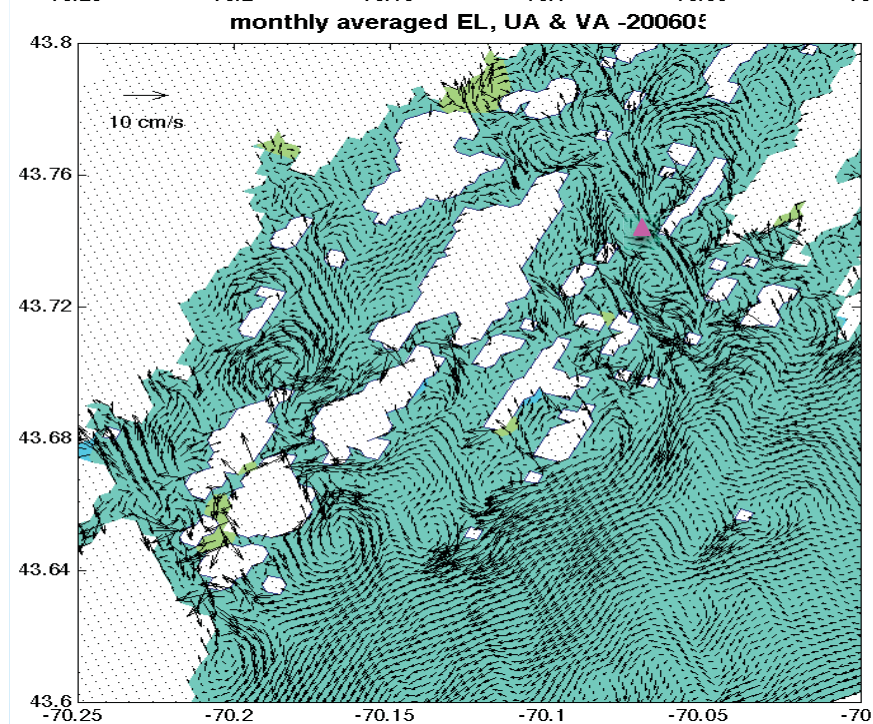
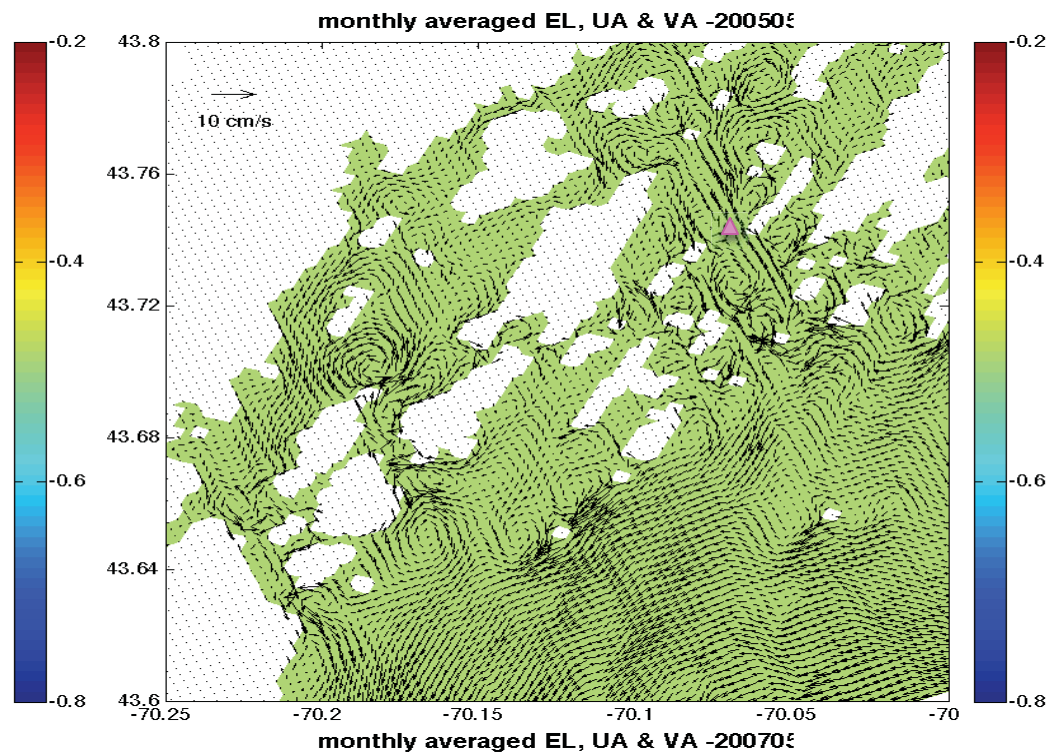
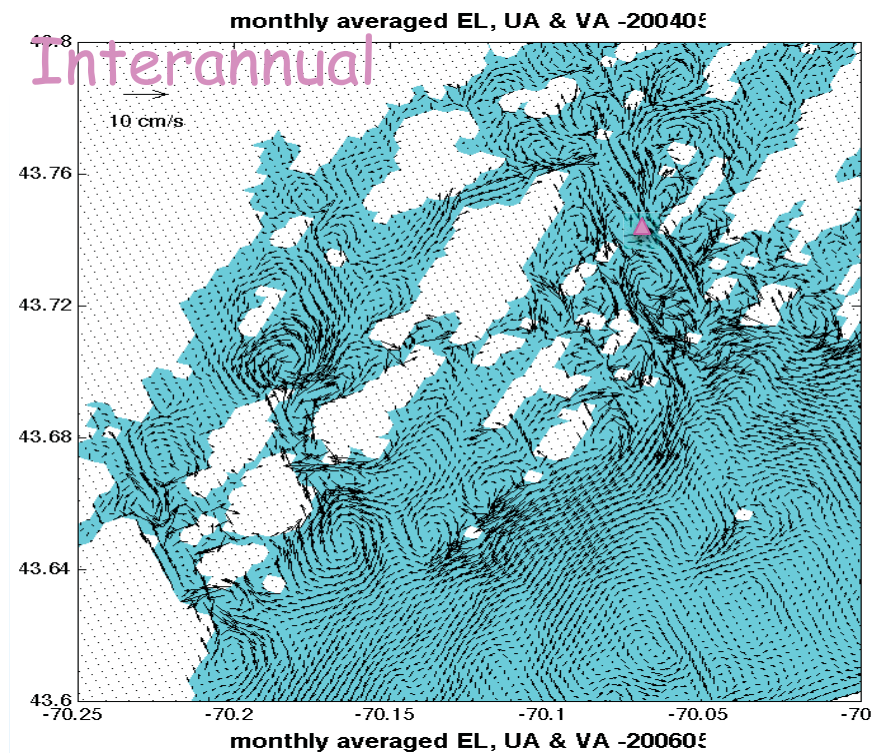


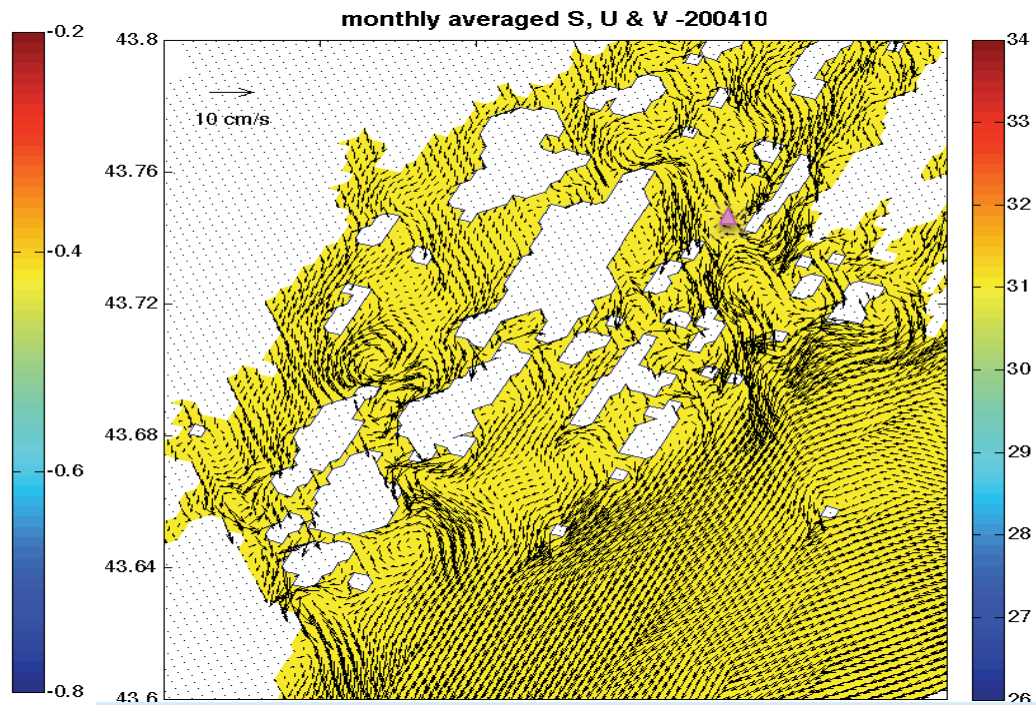
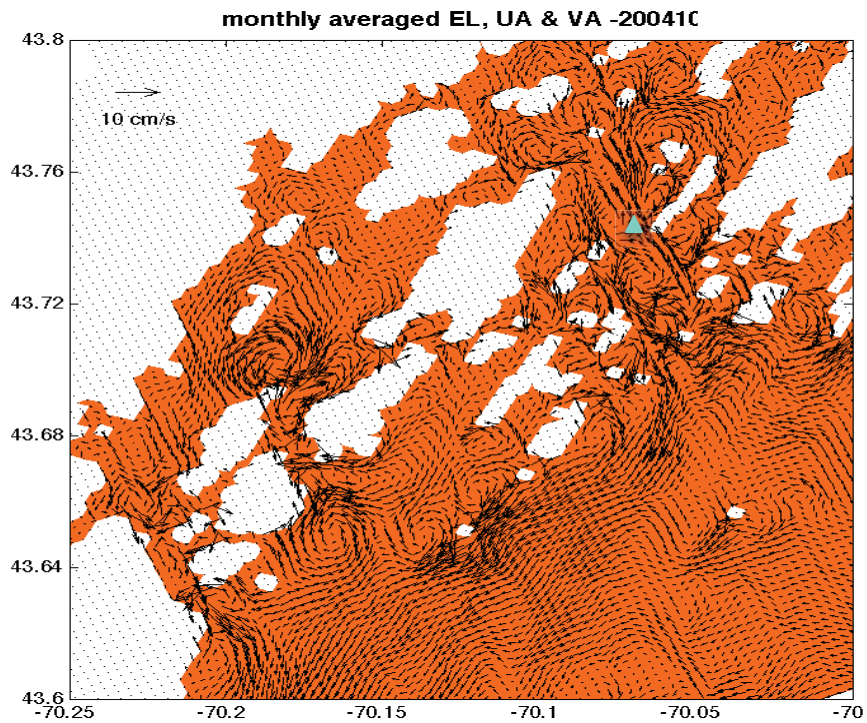
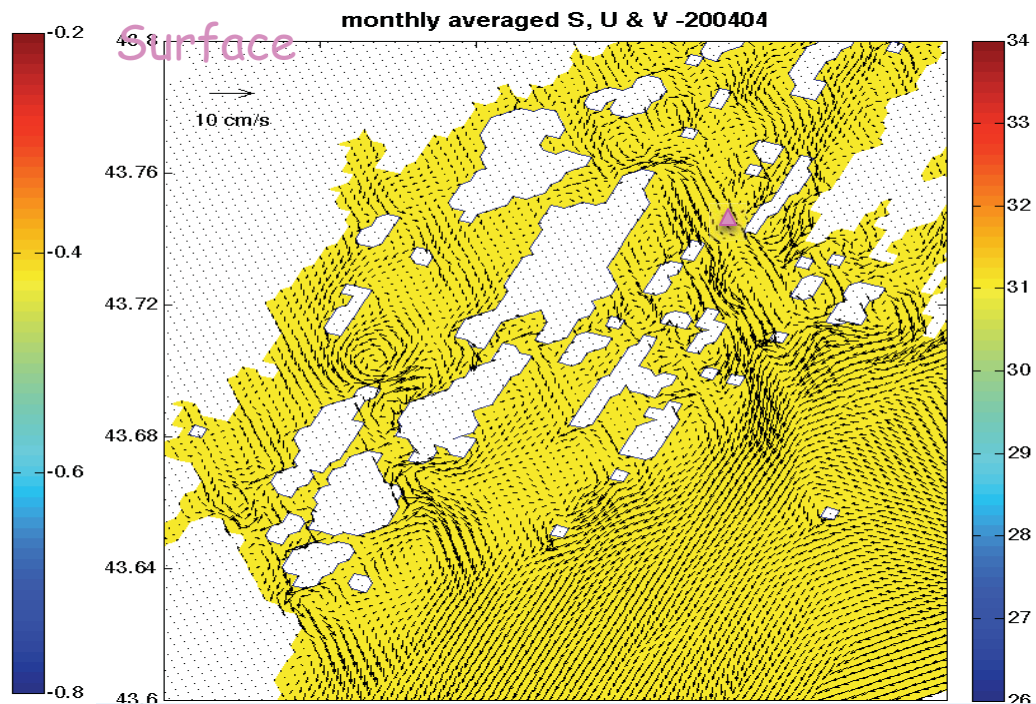
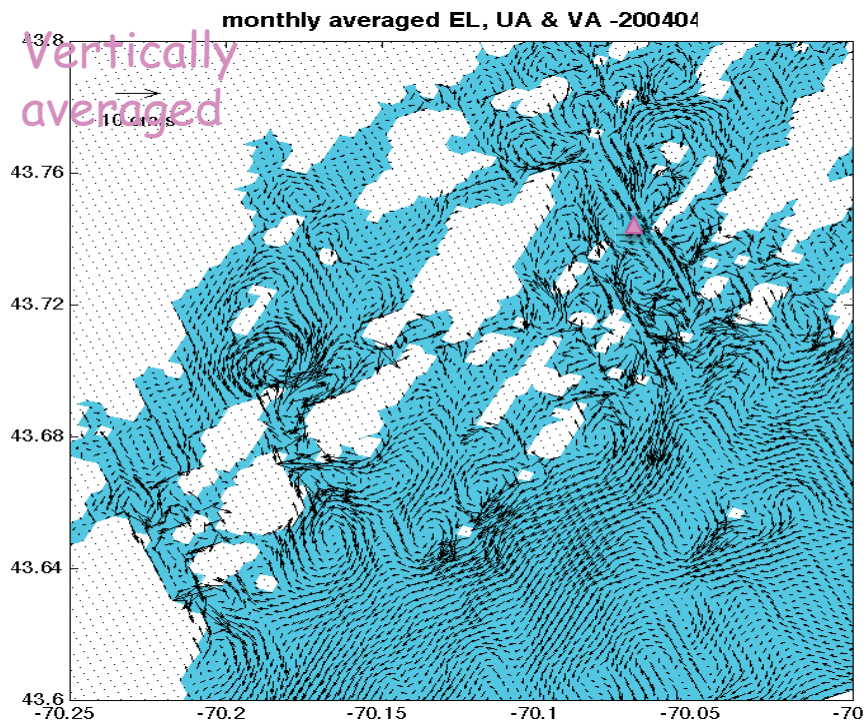
Comparison with UNH cruise Data

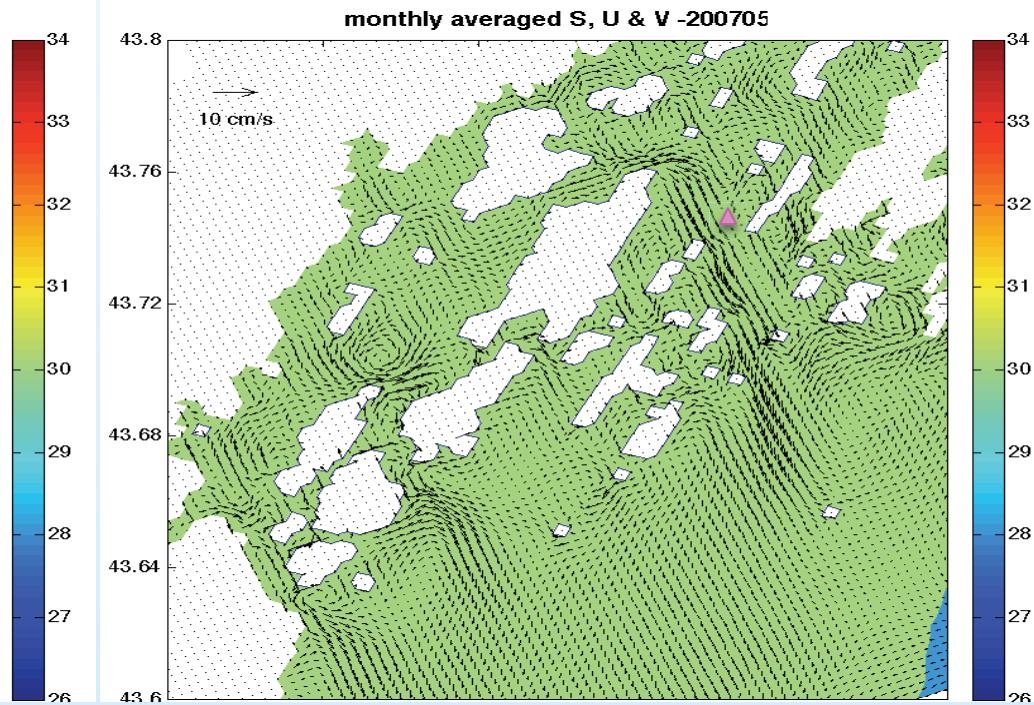
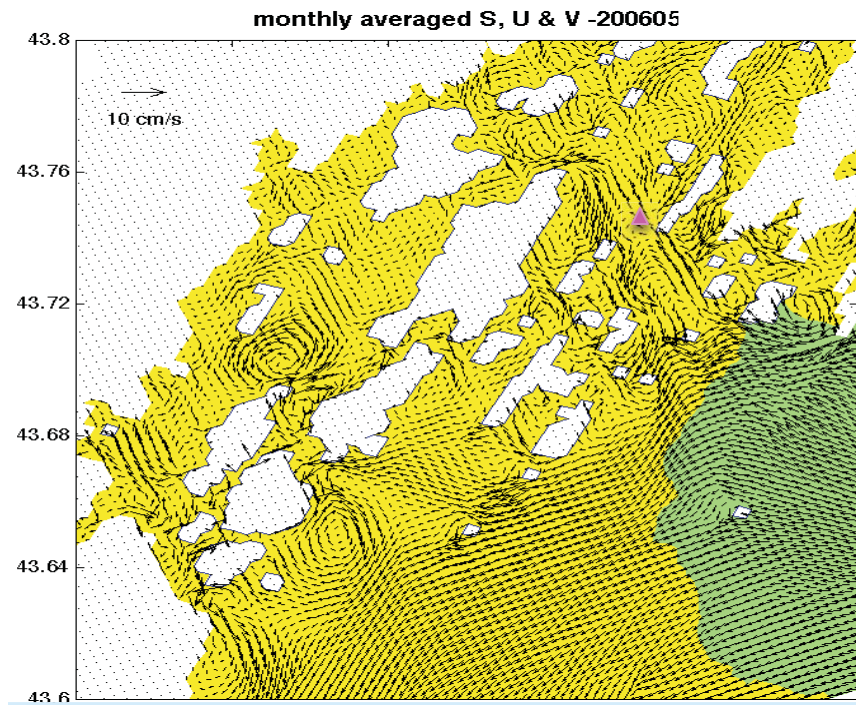
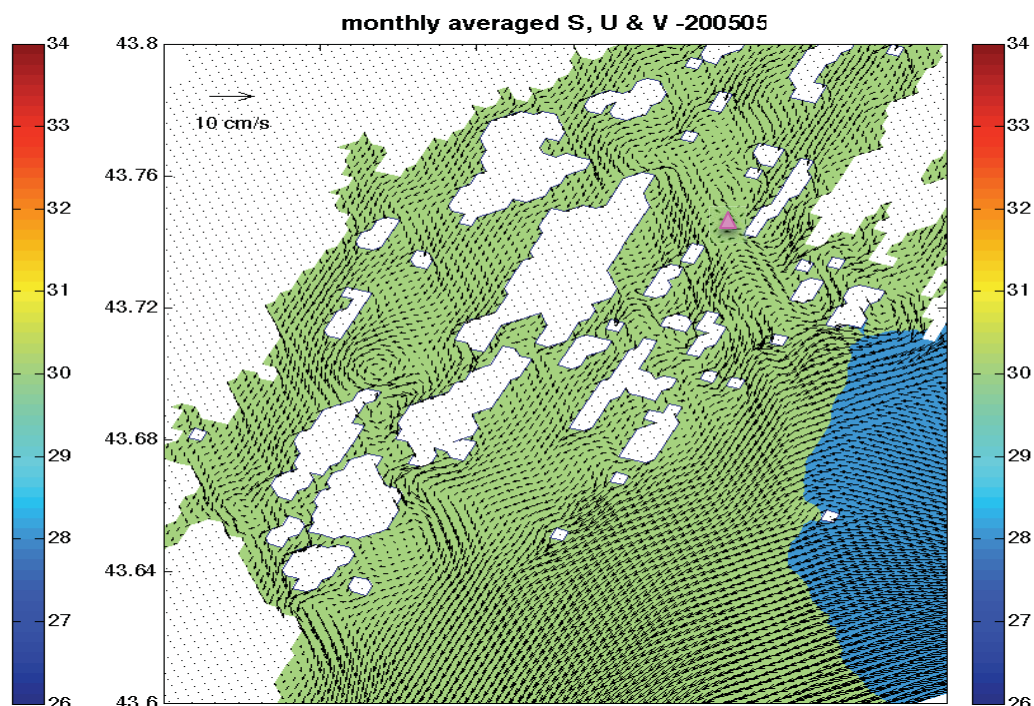
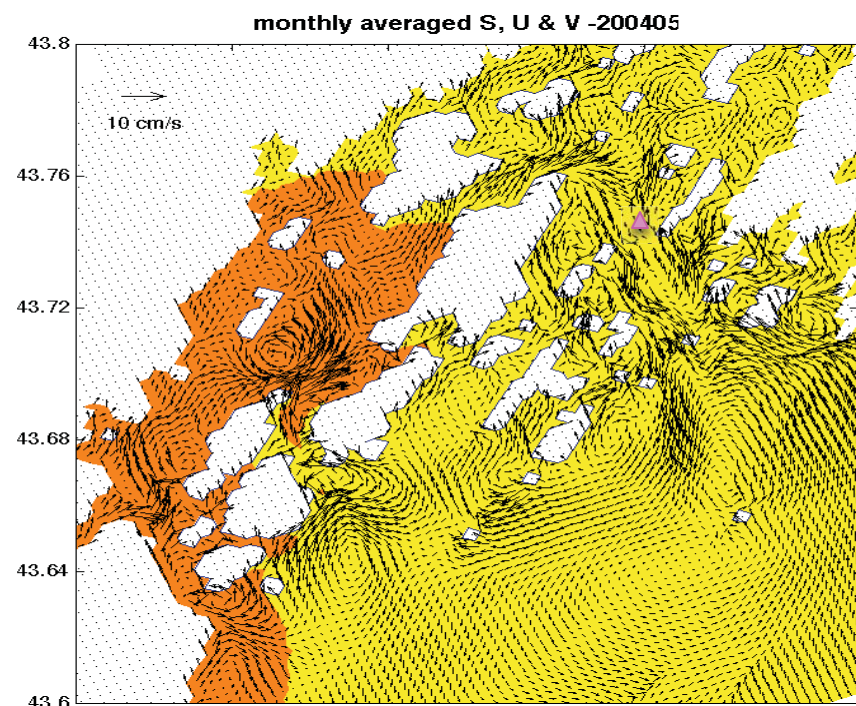
Xue & Du, OceDyn, 2010

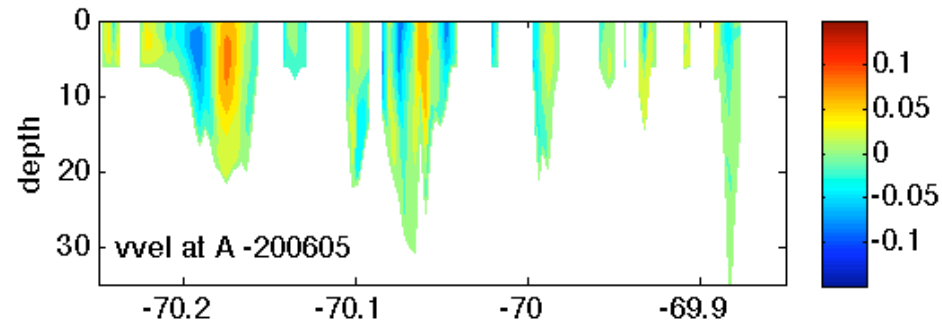
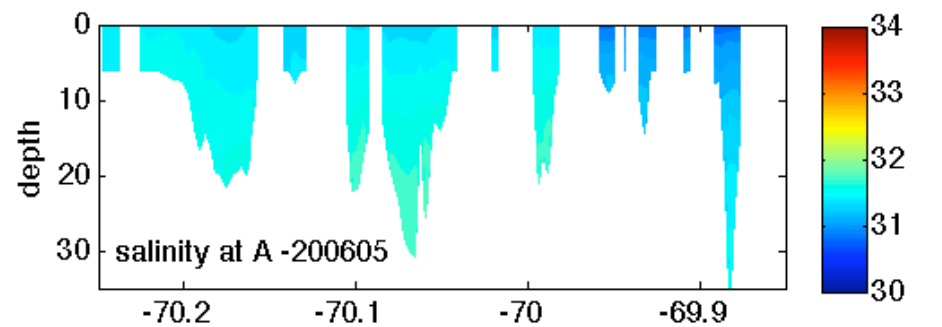
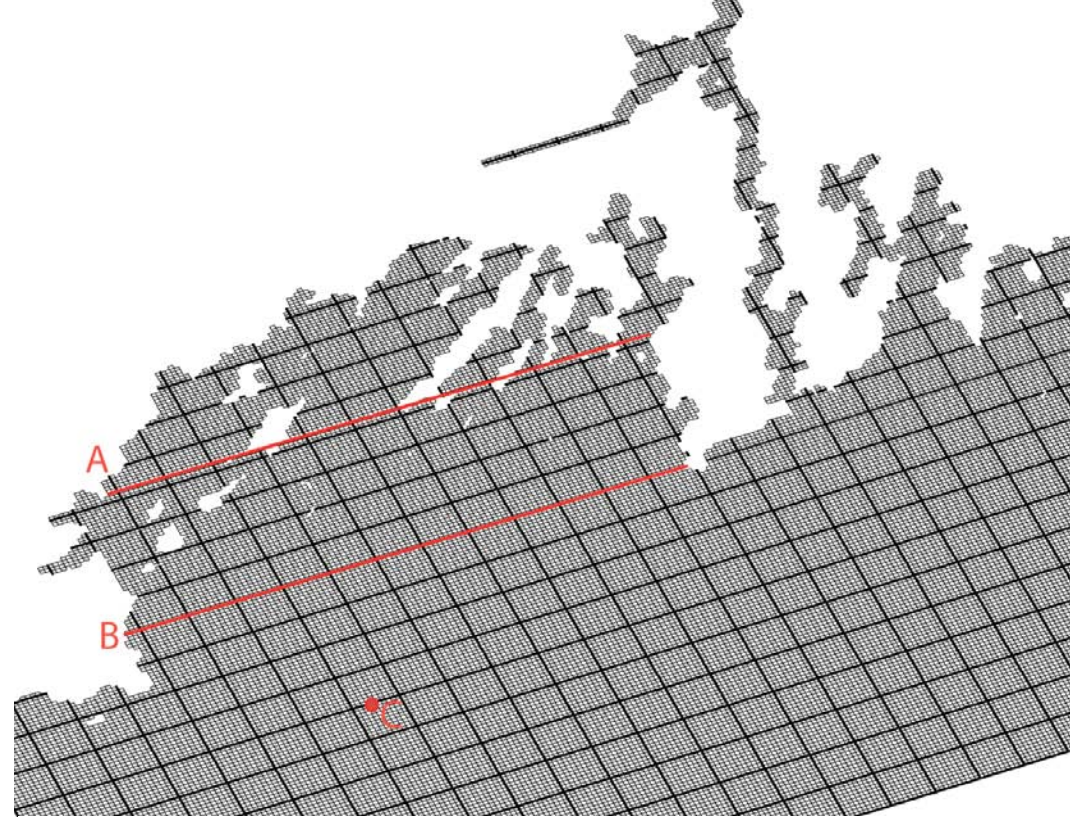
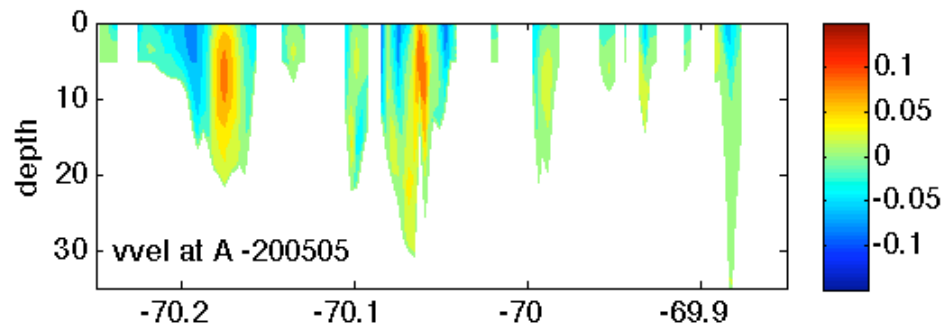
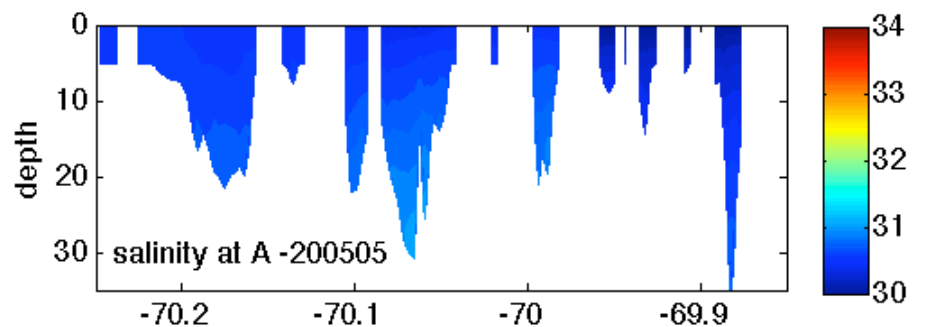
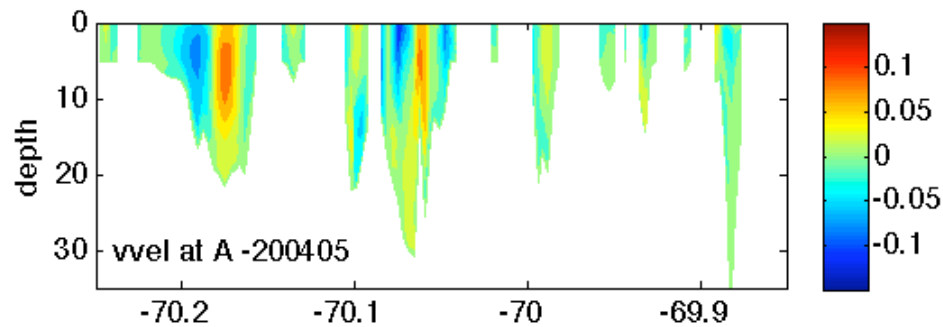
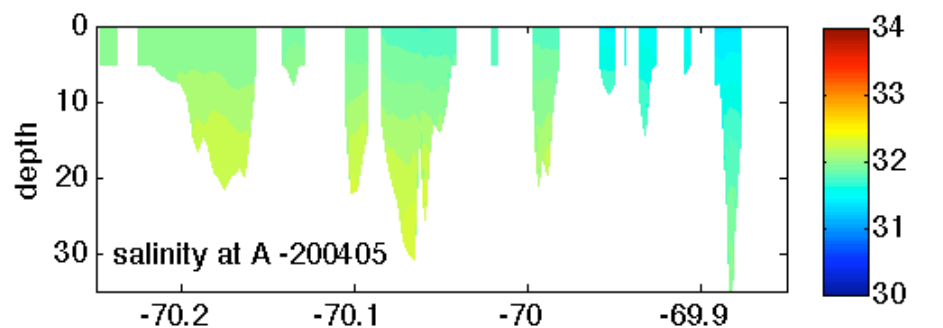


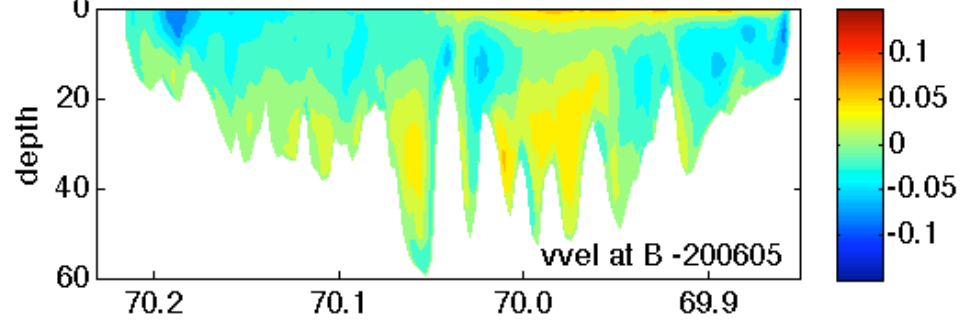
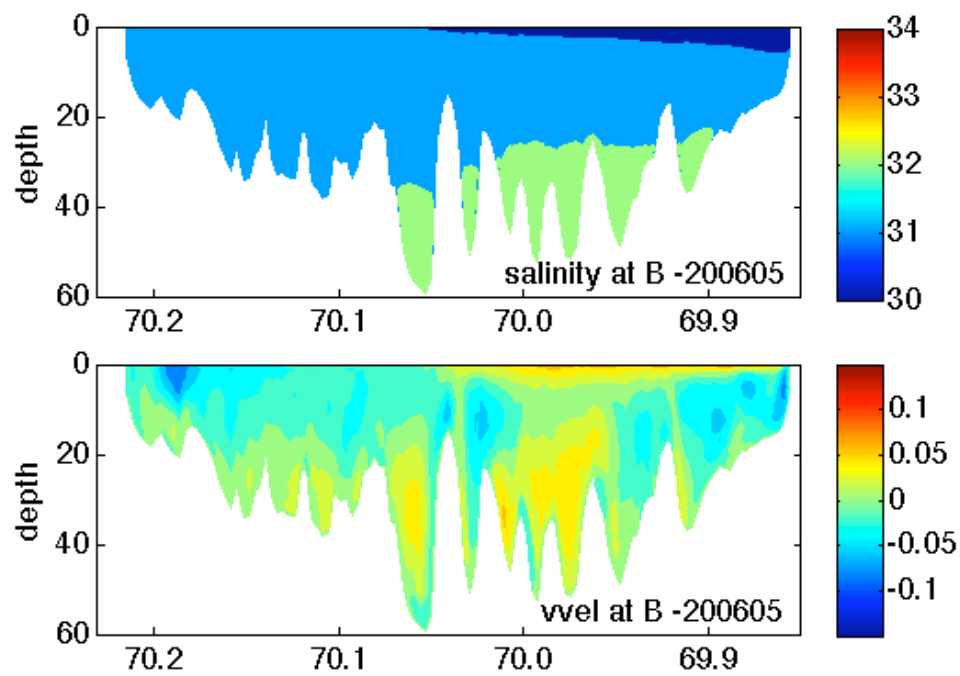
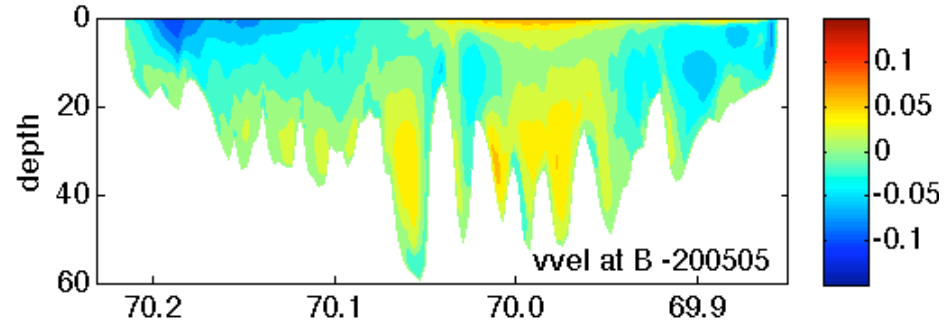
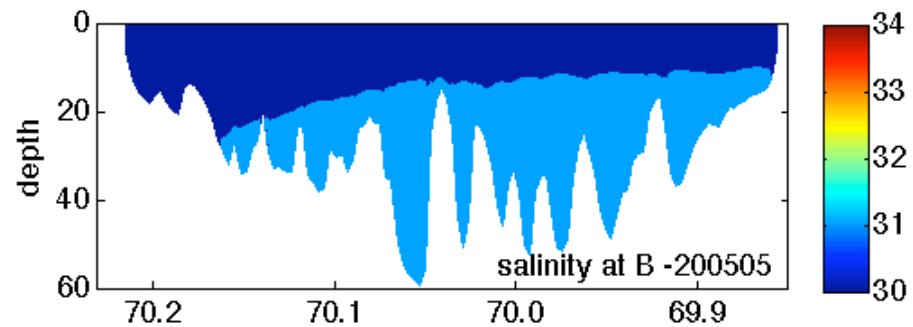
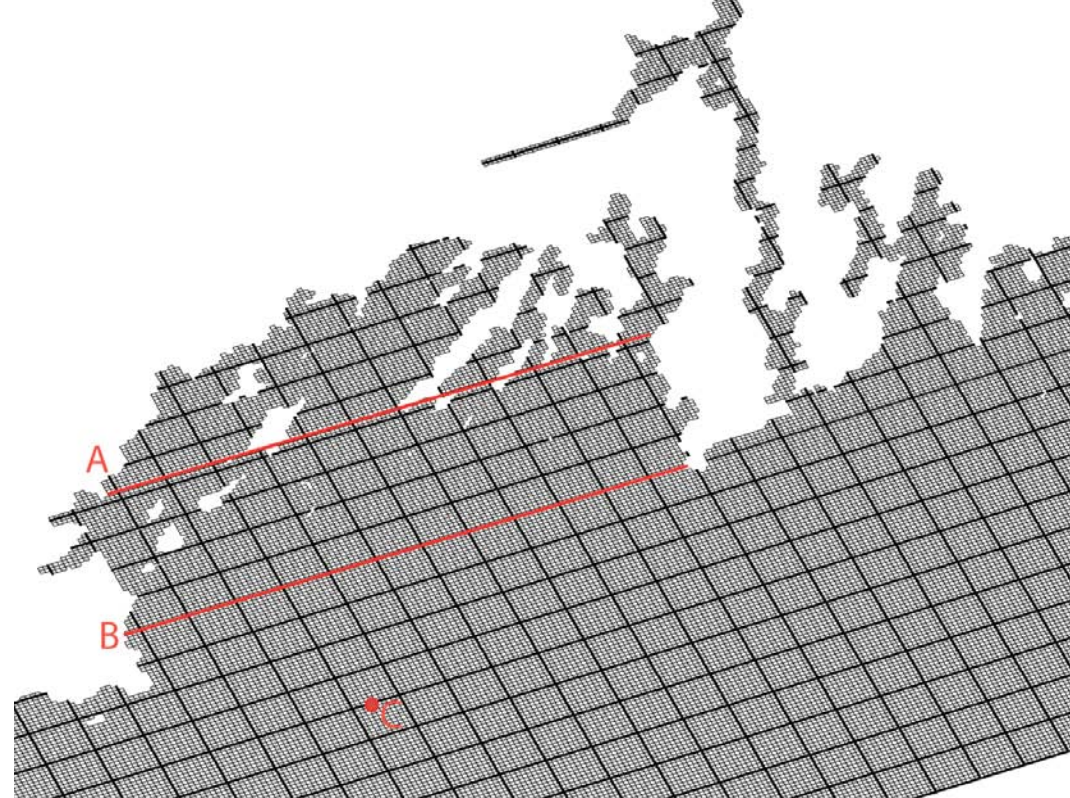
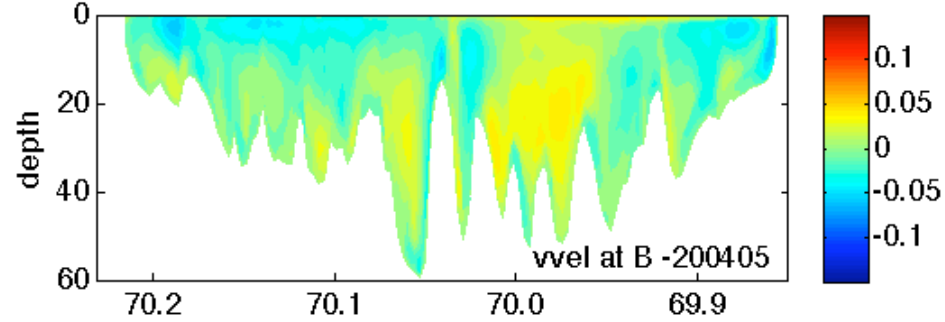
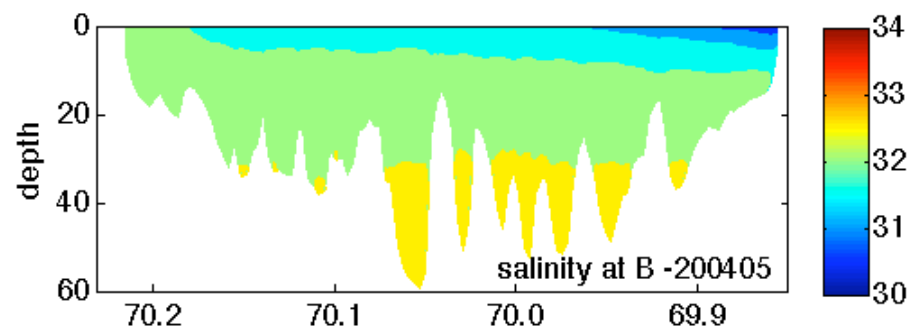








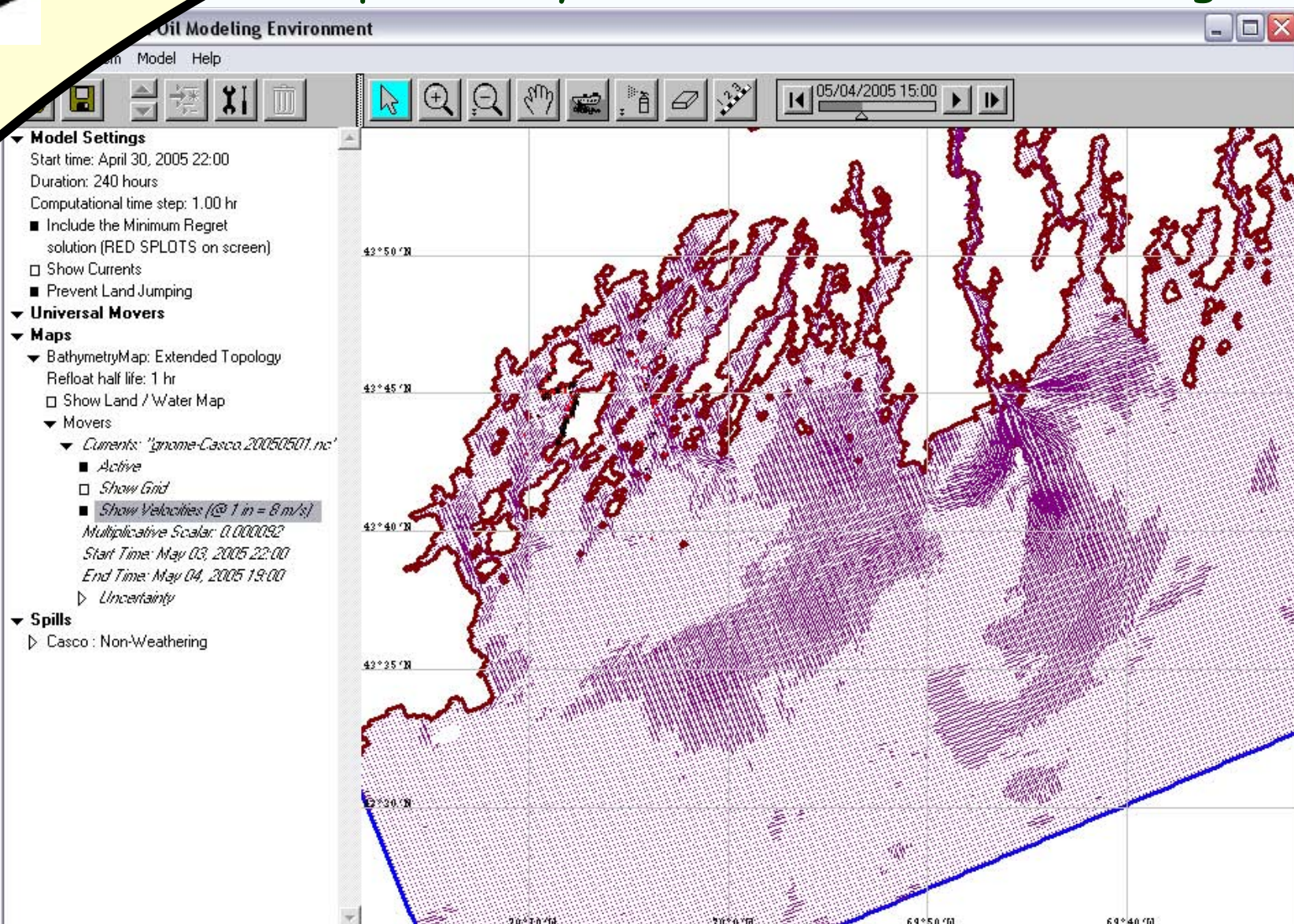






GNOME - Casco Bay

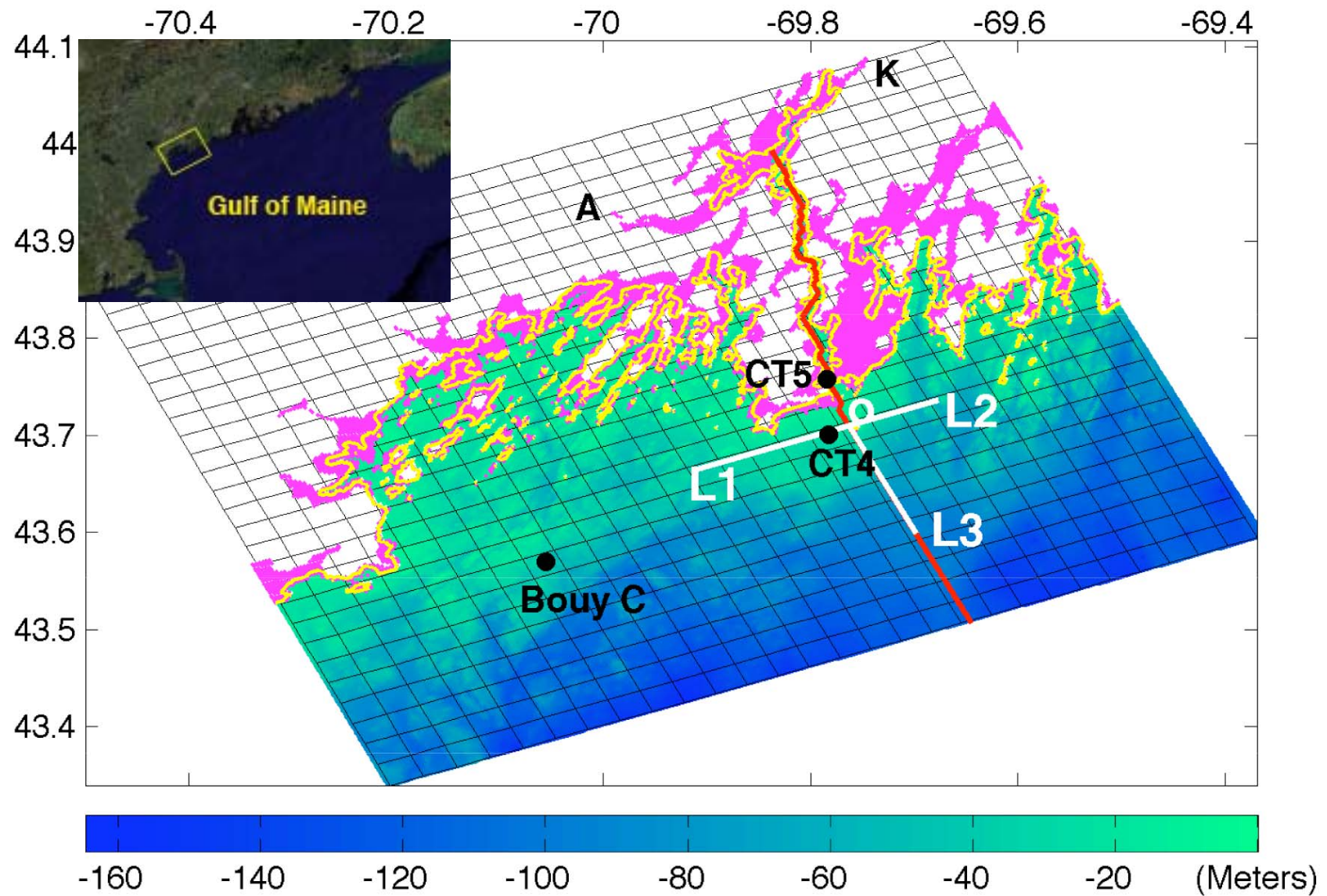
http://rocky.umeoce.maine.edu/casco_gnome



Summary

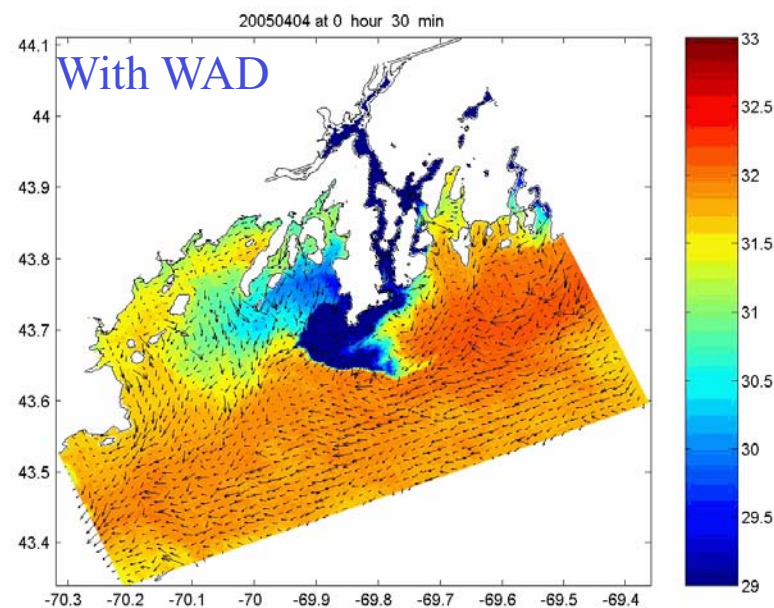
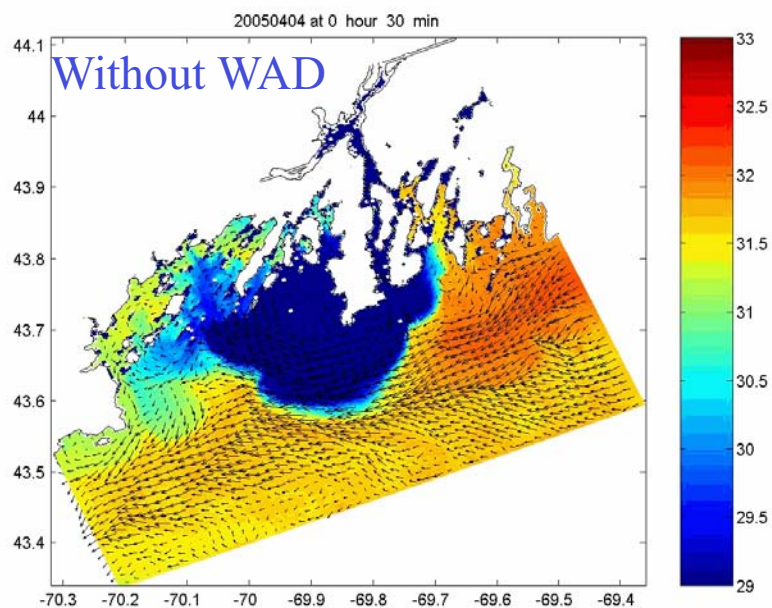
- A working circulation model with hindcast from March 2004 to September 2007
 - Compared with limited observations
- Combined with NOAA GNOME, the model simulation can be used to assist ecological and water quality studies of the bay.
- There were a number of extreme events during the simulation period, e.g., 2005 and 2006 were among the wettest years on the record; Nor'easters occurred in May 2005.

Effects of Wetting-and-Drying



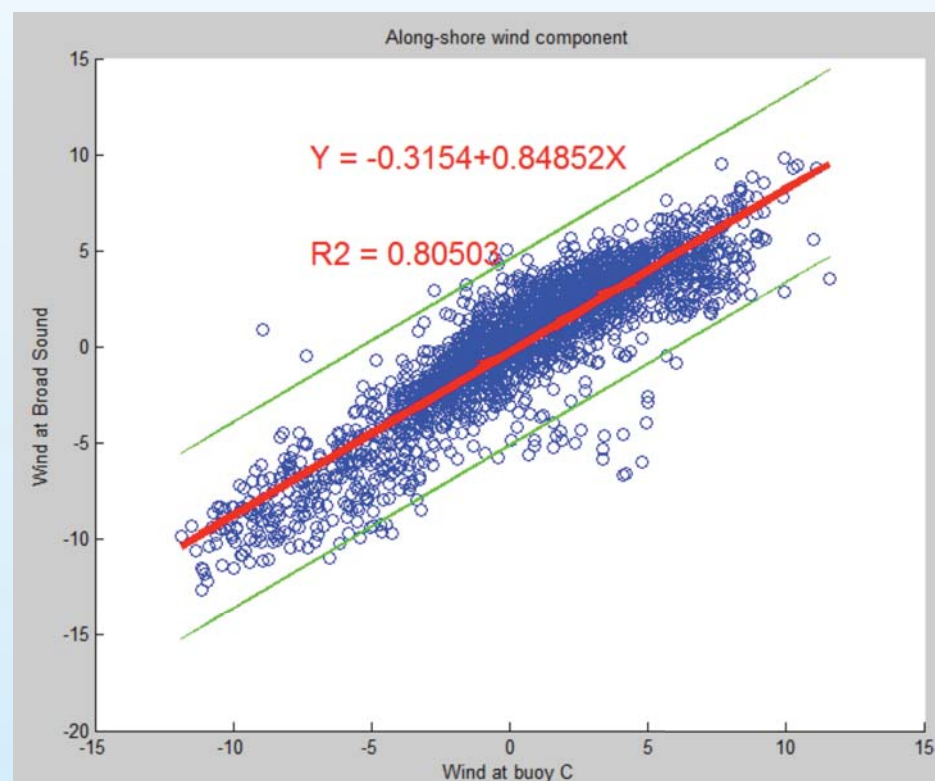
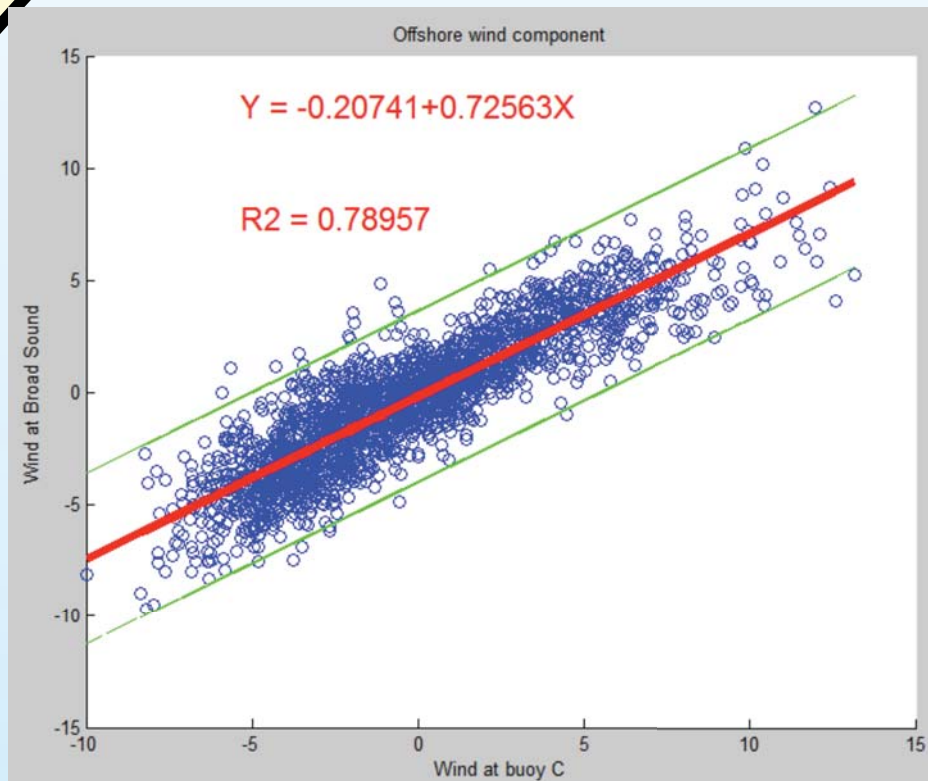
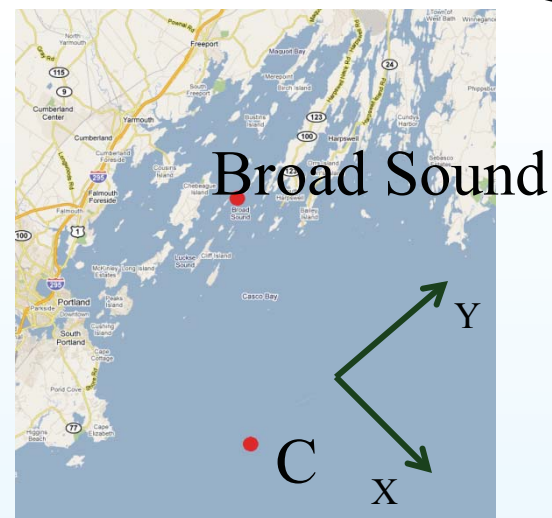


Effects of Wetting-and-Drying





Comparison of winds (from Greg Sinnett)



Future Improvements...

- Topography data (Portland, ME 1/3 arc-second MHW DEM from NGDC,
<http://www.ngdc.noaa.gov/dem/squareCellGrid/download/606>)
- Resolution
- Better representations of coastal processes
- Wind data
- Integration with in situ observations