UNC

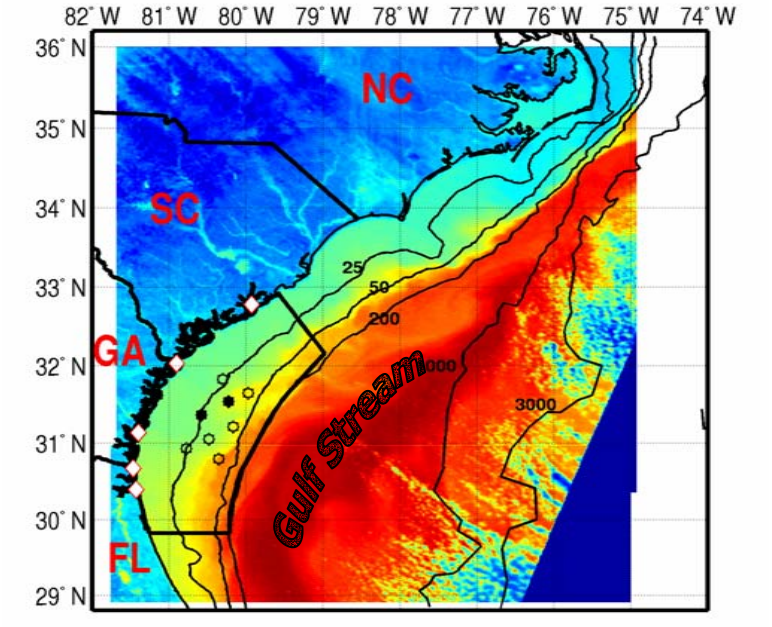
Thayer School of Engineering
Dartmouth College

South Atlantic Bight Limited Area Model

National Oceanographic Partnership Program

a consumer of IC's/BC's from HYCOM

Brian Blanton, Cisco Werner, Harvey Seim
Dan Lynch



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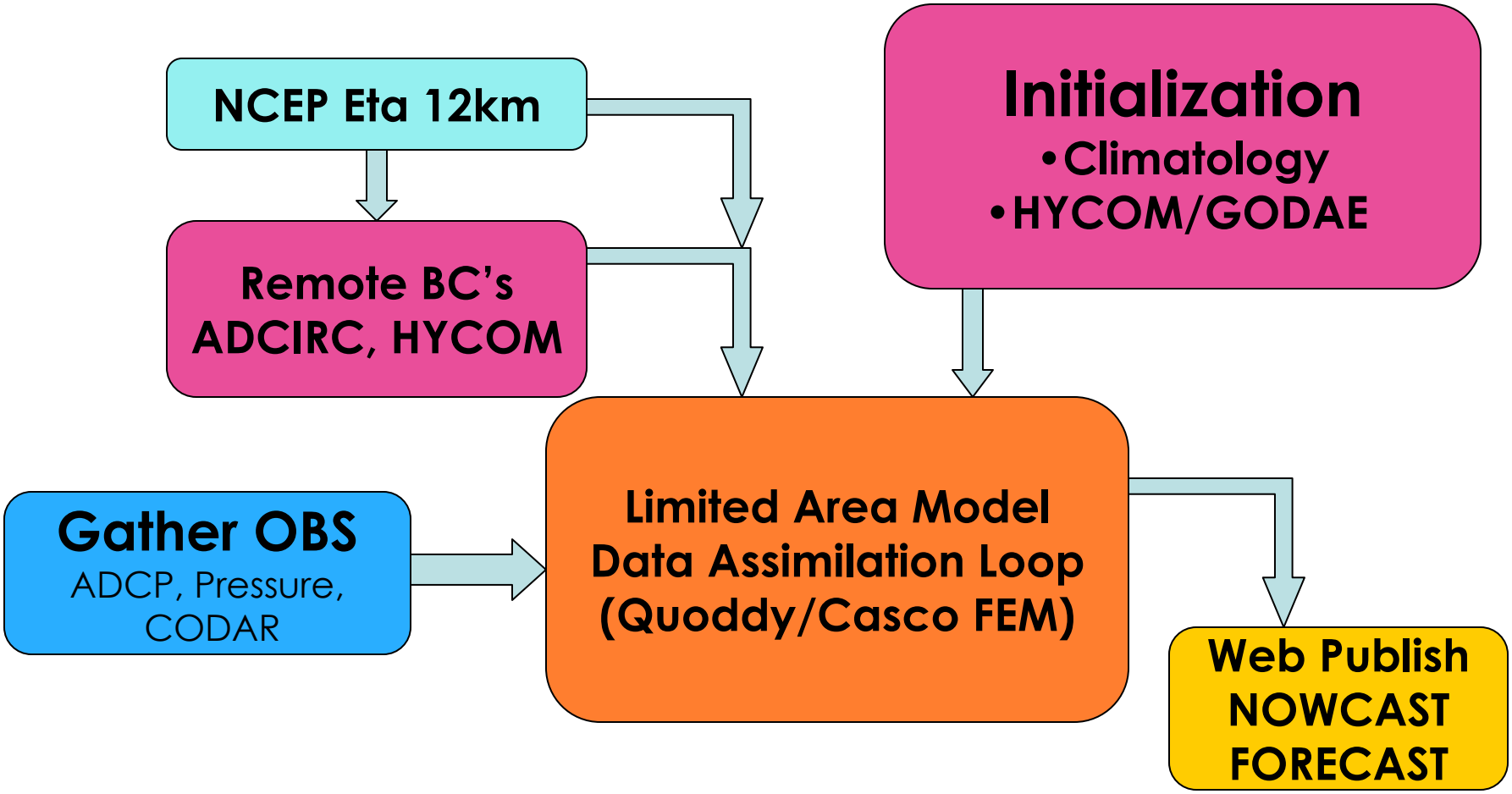
UNC's South Atlantic Bight Limited Area Model



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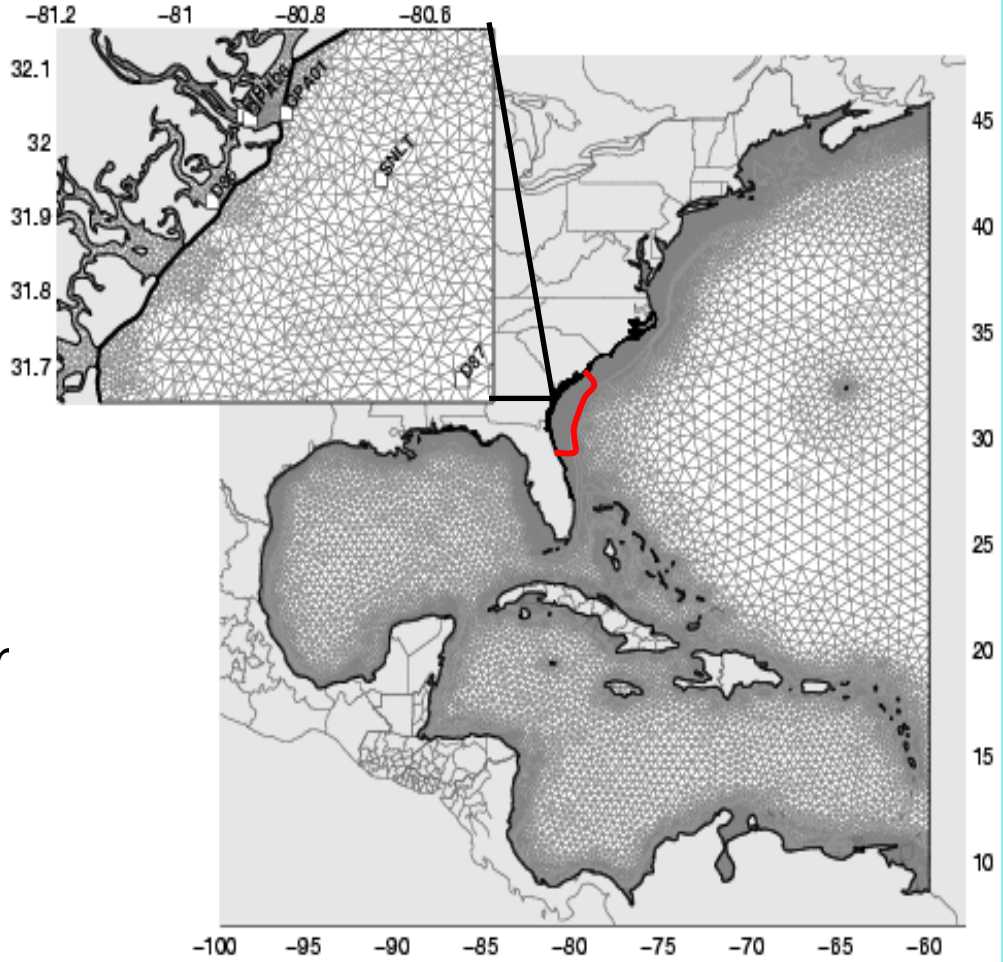
Limited Area Model

- High-res finite element, Baroclinic (Quoddy)
- Assimilation of Vbar, water level (adjoint of Quoddy)
- Real-time forecasting of coastal ocean state
- Need IC's and OBC's for T,S and "Remote" water level for Limited area region



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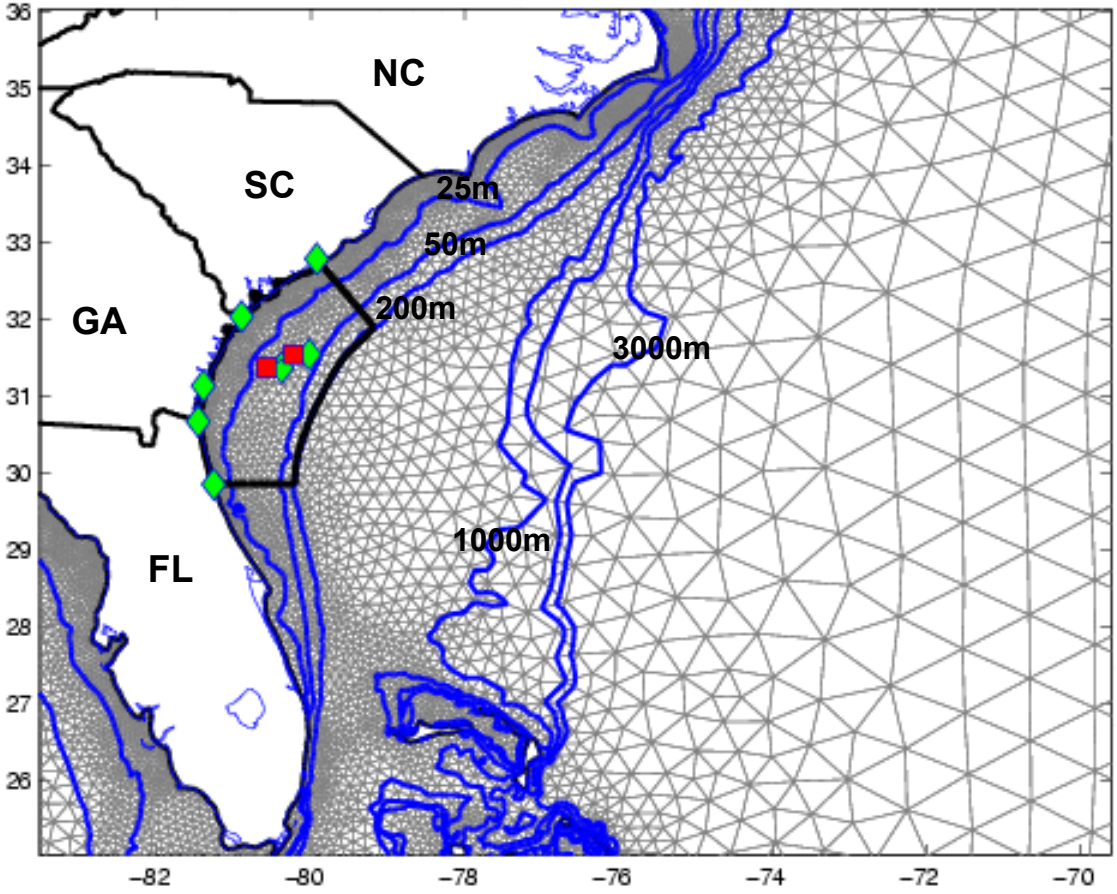
SABLAM Observations

East Coast Domain for Tidal/Wind-Driven BCs for Limited-Area Mesh

Nested SABLAM Mesh for Hindcast/Forecast System

Obs. Locations:

- **Water Level**
- **ADCP**



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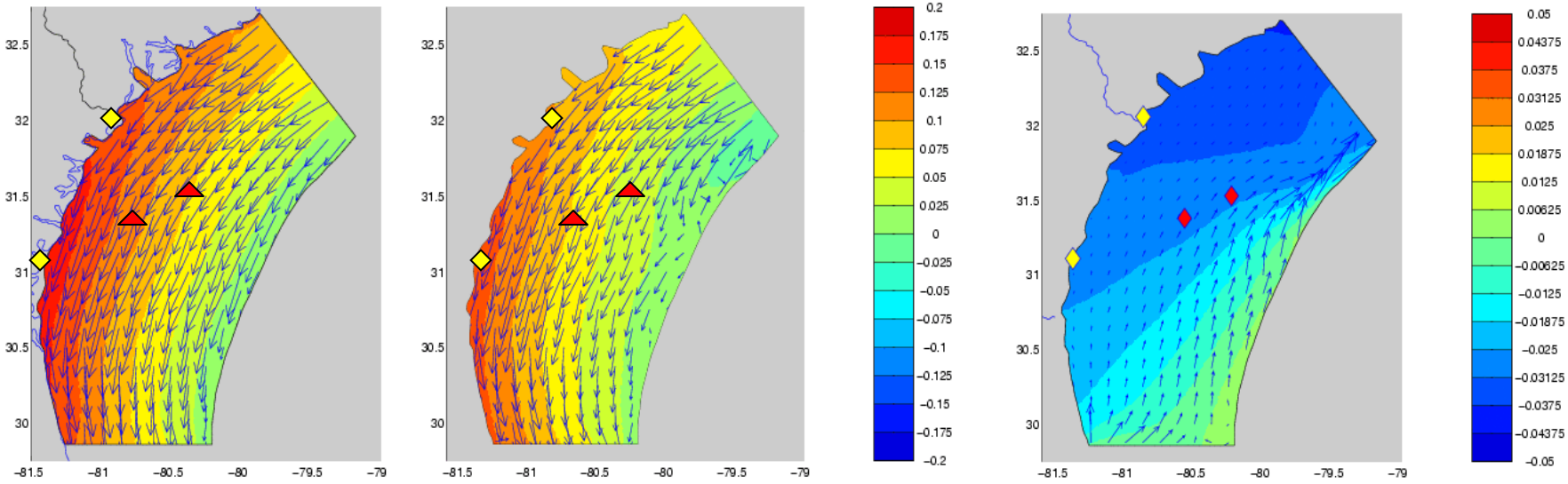
SABLAM Operational Example

- 10-13 Dec 2002
- Strong Southward Winds
- Assim of WL from Ft. PL, St Sim ◆
- Assim of Vbar from R2, R6 ▲

- Post-Prior
  - Weak poleward flow missing in Prior
  - Cross-shelf slope
  - Is this the G.S.?
  - Can Hycom Compensate

Prior

Posterior



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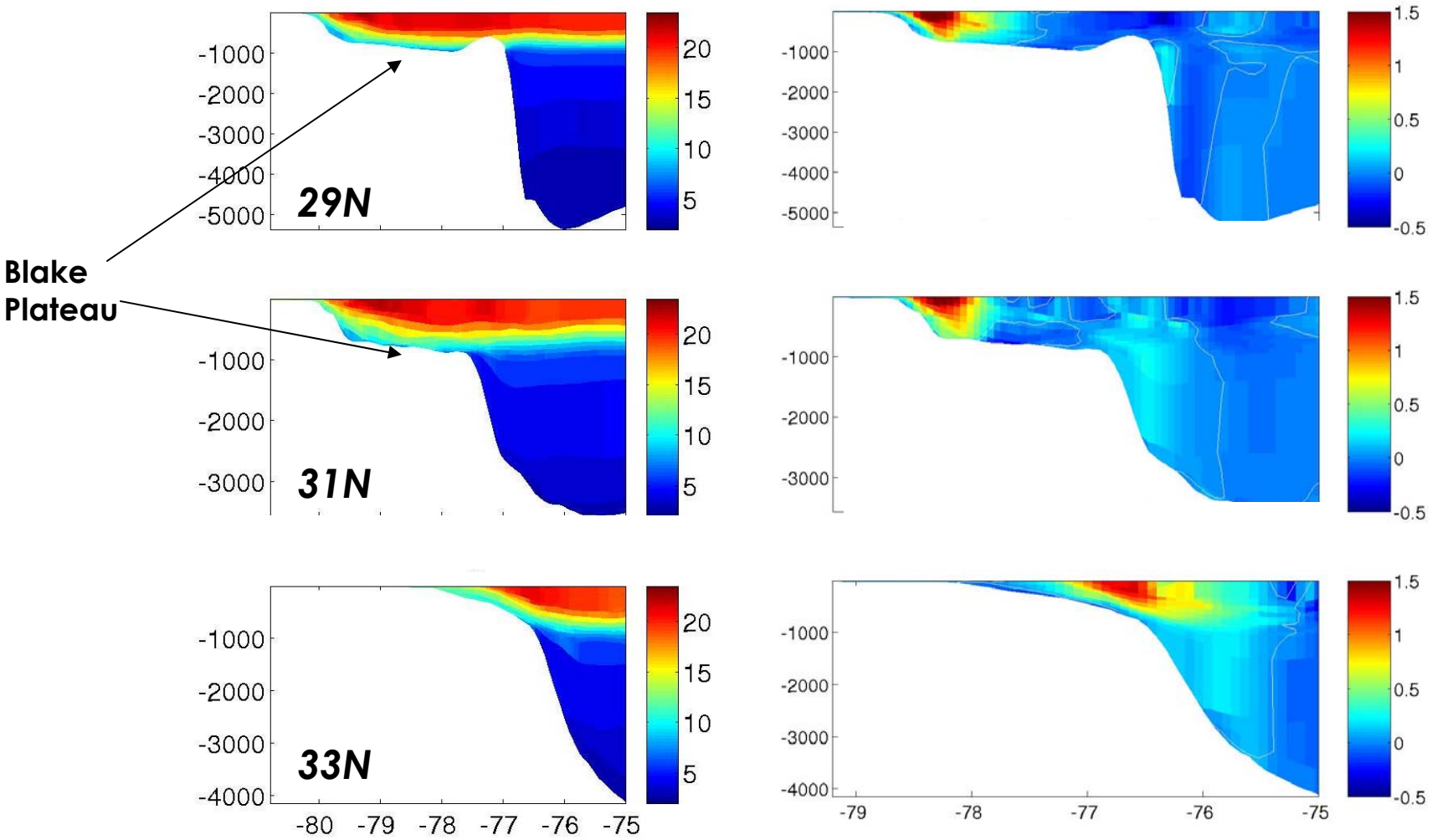
HYCOM Transects



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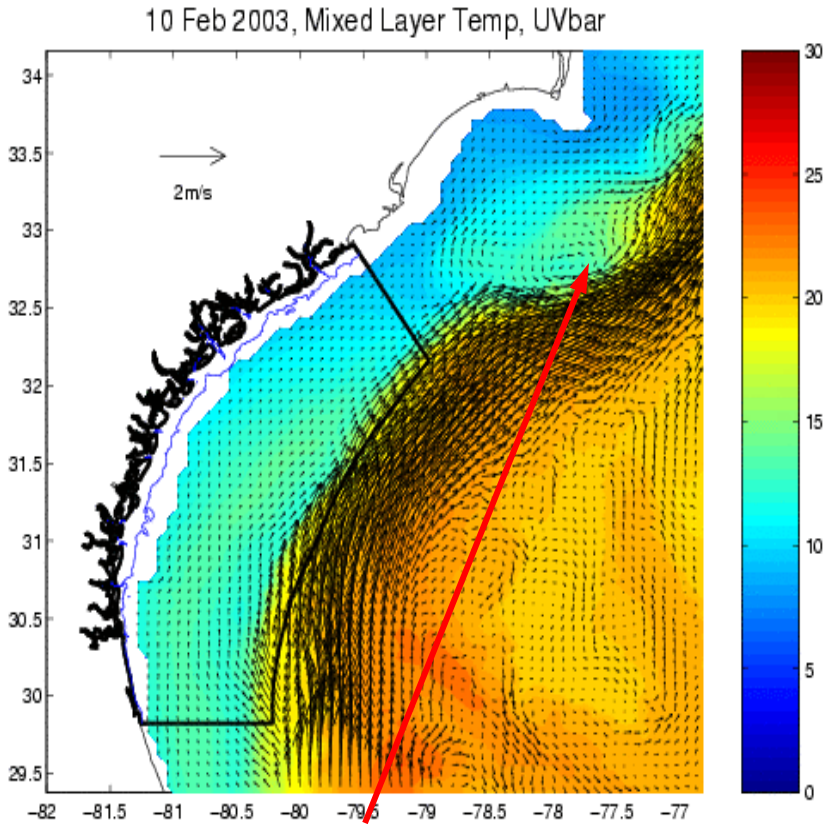
“Coupling” to HYCOM in SAB

- Technical/Procedural Questions:
  - Mapping HYCOM TS to regional grids; very different scales
  - Vertical grid, particularly @ shelfbreak
  - Frequency of HYCOM nowcasts
  - Impact on assimilation system
- Scientific Questions:
  - Low-freq sealevel variability as related to GS transport, *a la* Blaha, Sturges, e.g.
  - Mid-shelf TS comparisons to SABSOON towers
  - Charleston Bump Dynamics



Deflection at Charleston Bump

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THE END

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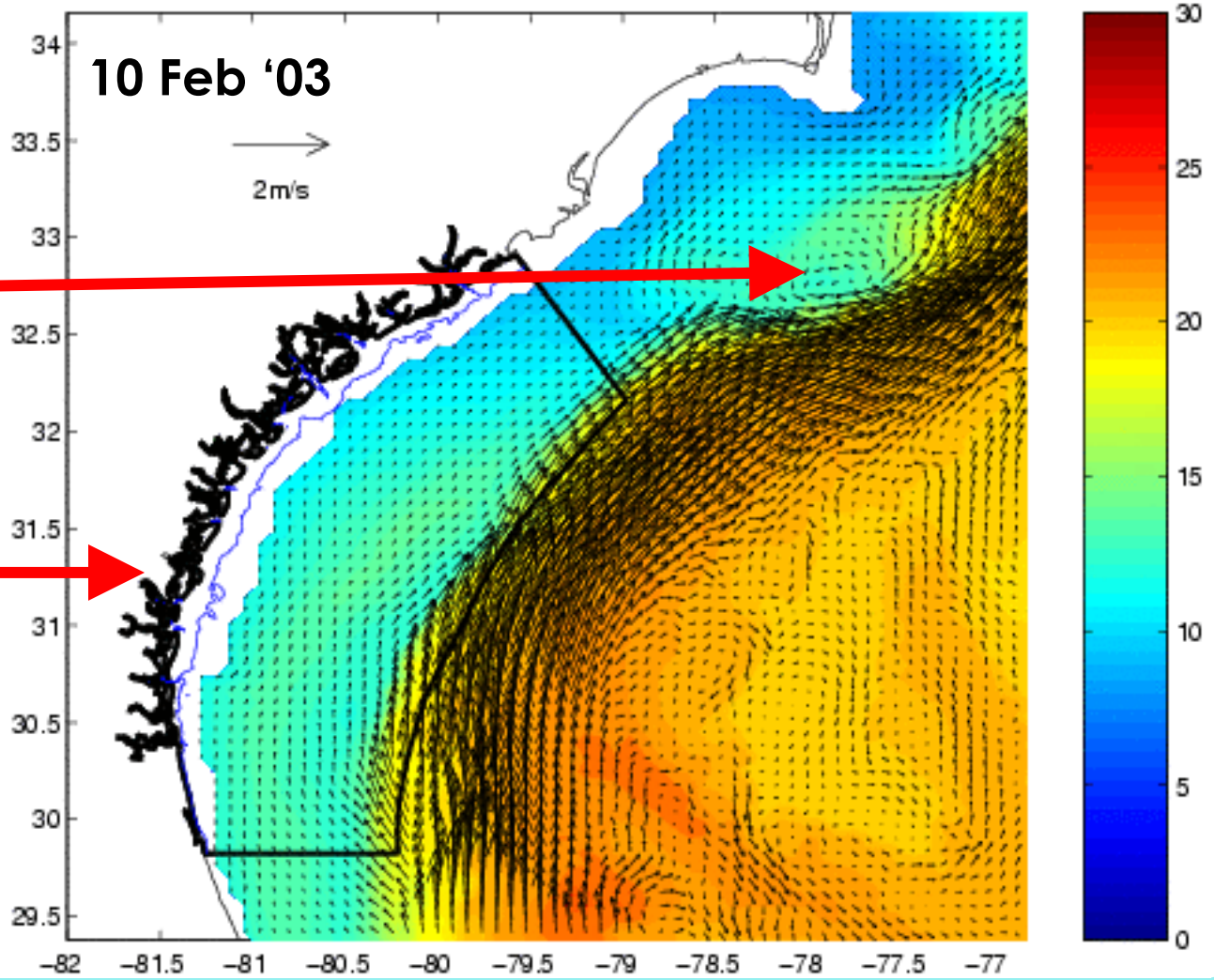
HYCOM Mixed Layer Temp, UVbar

Deflection at Charleston Bump

SABLAM FEM Boundary



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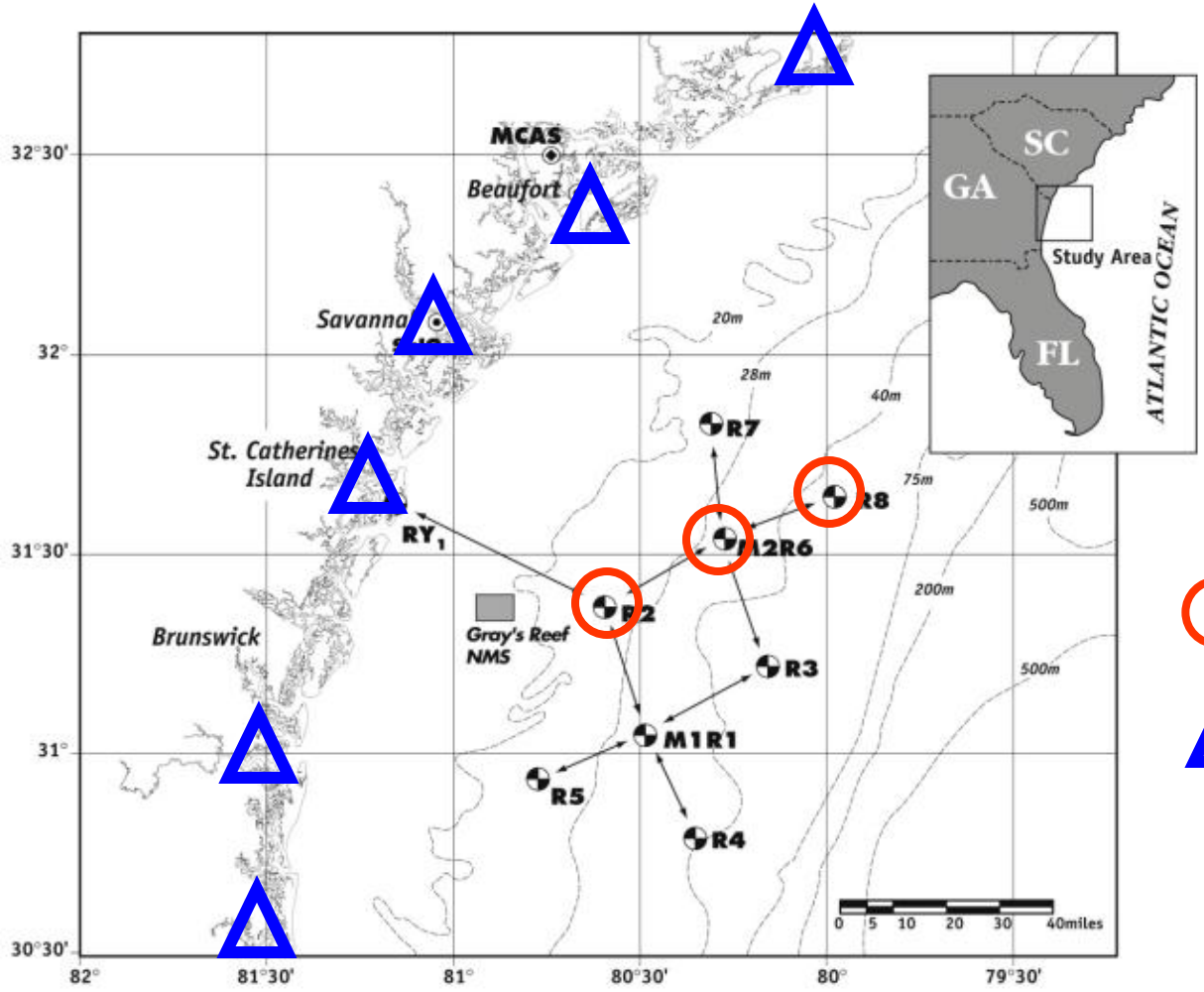

ADCP

Water Level

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