U.S. GODAE: Global Ocean Prediction with the

Community Effort: NRL, U. of Miami, NASA-GISS, NOAA/NCEP, NOAA/AOML, NOAA/PMEL, PSI, FNMOC, NAVOCEANO, SHOM, LEGI, OPeNDAP, UNC, Rutgers, USF, Fugro-GEOS, Orbimage, Shell, ExxonMobil

Logistics

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- Open wireless access throughout the campus
- Couple of workstations in the back of the auditorium
- Group photo at 3:20pm.

WEAR YOUR T-SHIRTS

- Dinner tomorrow night on the patio
- Tonight: “The Knife”, 3444 Main Highway, Coconut Grove.

Logistics

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Speakers, please download your presentation to conference laptop

Objectives and goals

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- A broad partnership of institutions that collaborate in developing and demonstrating the performance and application of eddy-resolving, real-time global and basin-scale ocean prediction systems using HYCOM.
- To be transitioned for operational use by the U.S. Navy (H. Hurlburt, F. Bub) at NAVOCEANO and FNMOC and by NOAA (D.B. Rao) at NCEP.

Objectives and goals

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- Strong participation of the coastal ocean modeling community in using and evaluating boundary conditions from the global and basin-scale ocean modeling prediction systems
- Efficient data distribution (DURIP funding for an 80 Terrabytes SAN)

Publications

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- 11 submitted
- 4 in press
- 9 published in 2005, 4 in 2004, 3 in 2003, 2 in 2002

Available at http://www.hycom.org

Roadmap

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- Basin-scale
  - FY04 to FY07: Improvements to the present near real time NRL/Miami 1/12º North Atlantic configuration (T. Townsend). Evaluation of MVOI and of the SEEK and ROIF filters (J. Cummings, O.M. Smedstad, H. Kang, L. Parent, Z. Garraffo, A. Srinivasan). Overlap in FY07 with the global configuration (J. Metzger) for assessment of the global system in the Atlantic.
  - NCEP Atlantic configuration (C. Lozano, R. Daniels) will become operational in FY06 and Pacific configuration in year FY08.

Configuration of the basin-scale prediction systems

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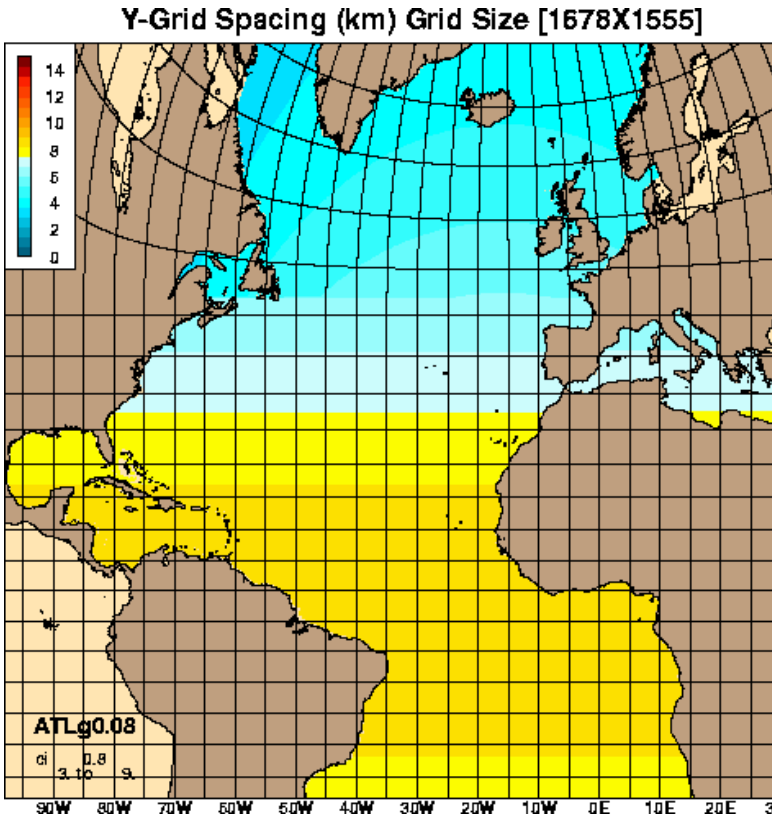
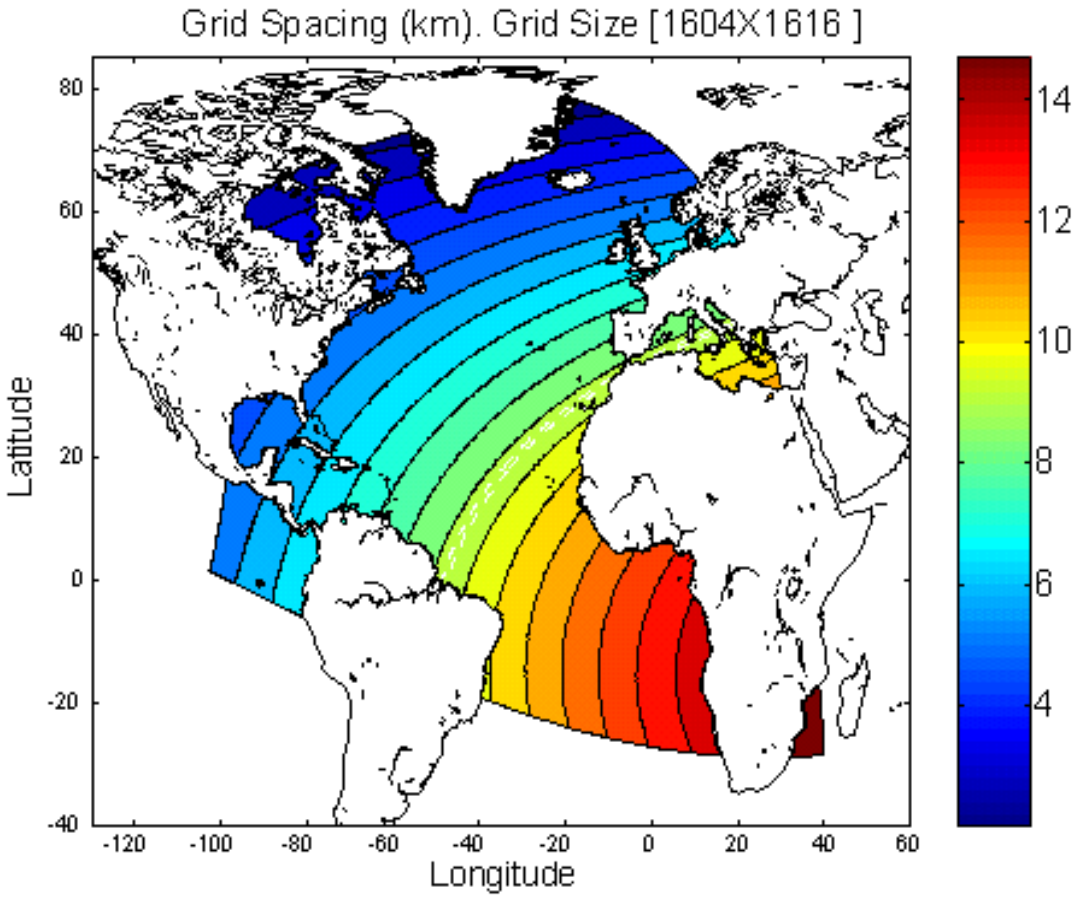
NRL/Miami



NOAA/NCEP



Roadmap

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- Global configuration
  - Development has been taking place since FY04 (J. Metzger).
  - Transition to NAVOCEANO (1/12º) and FNMOC (1/4º) with MvOI in FY07.
  - Operational testing in year FY08.

Configuration of the global prediction system

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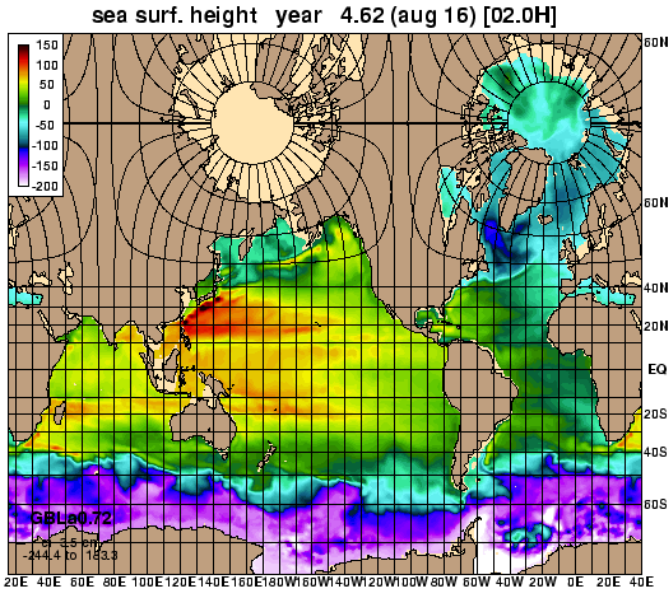
- Global
  - Sea Ice Options
    - Energy loan
    - 4-layer thermodynamic (Russel et al., 2000)
    - Los Alamos CICE
  - Target
    - 1/12º for NAVOCEANO
    - 1/4º (~20 km) for FNMOC (ocean component of coupled ocean-atmosphere)



Roadmap

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- Product evaluation (FY04-FY08)
  - Assessment of the outputs by comparison to independent observations
  - Comparison with other GODAE products (i.e. MERSEA collaboration)
  - Strong involvement of coastal ocean modeling groups to use and evaluate boundary conditions provided by the global and basin HYCOM real time prediction system outputs

South Atlantic Bight nested finite element model

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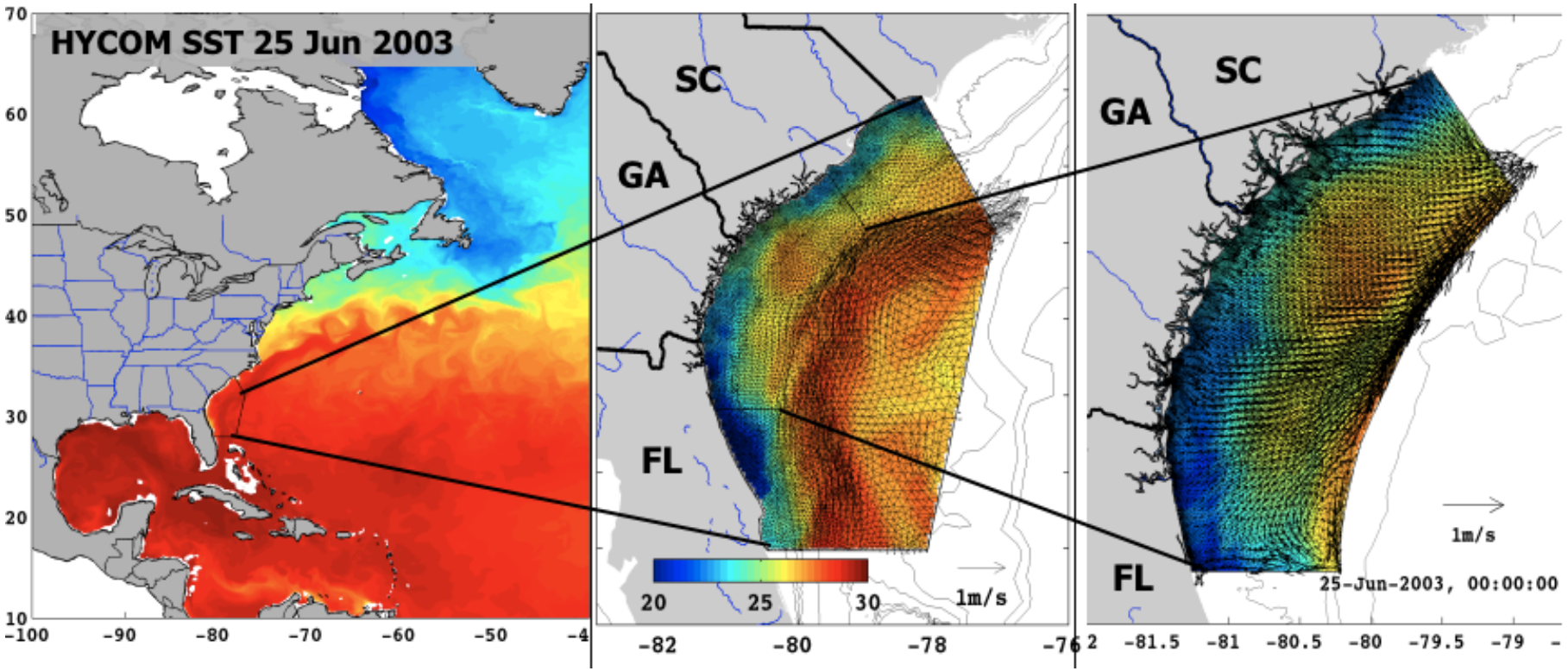

Blanton et al.

West Florida Shelf modeling

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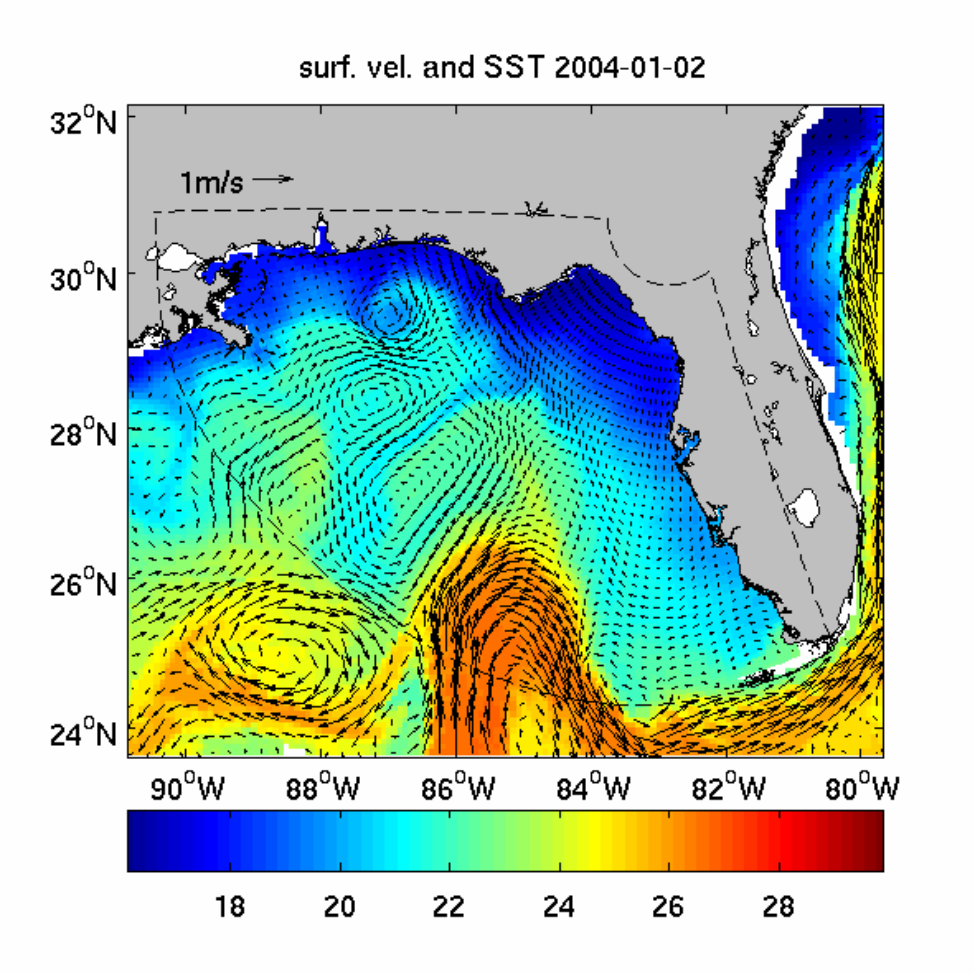
Barth et al.



Regional model for South Florida seas

SoFLA-HYCOM

(South Florida Hybrid Coordinate Ocean Model)

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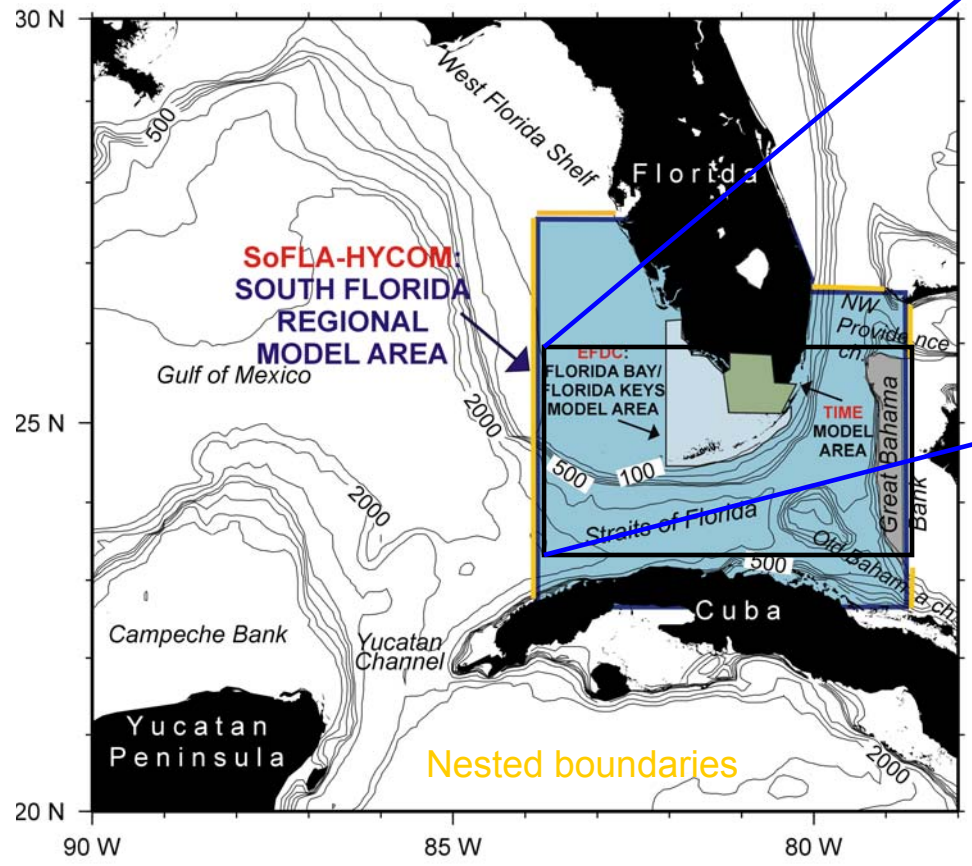

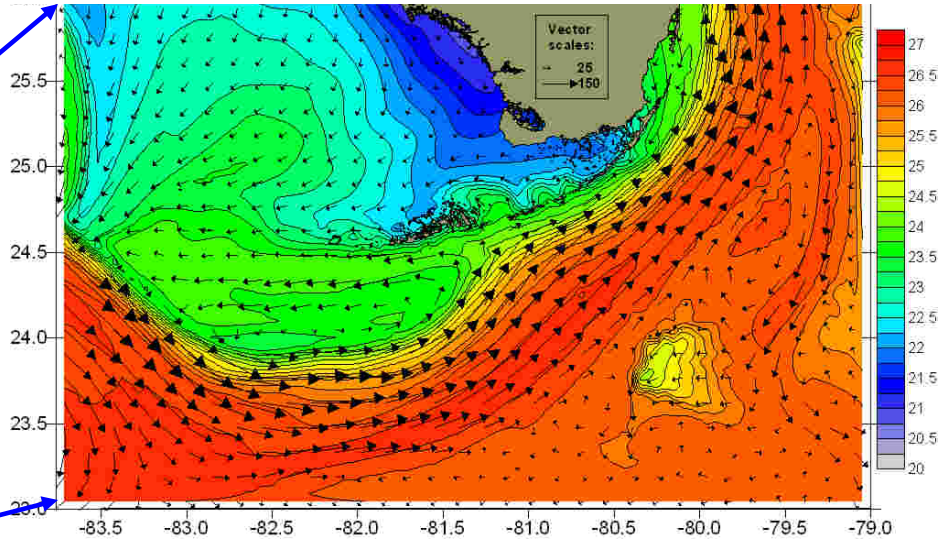

Surface temperature and velocity

Kourafalou et al.

US west coast HYCOM with biology nested in 1/12° Pacific HYCOM basin

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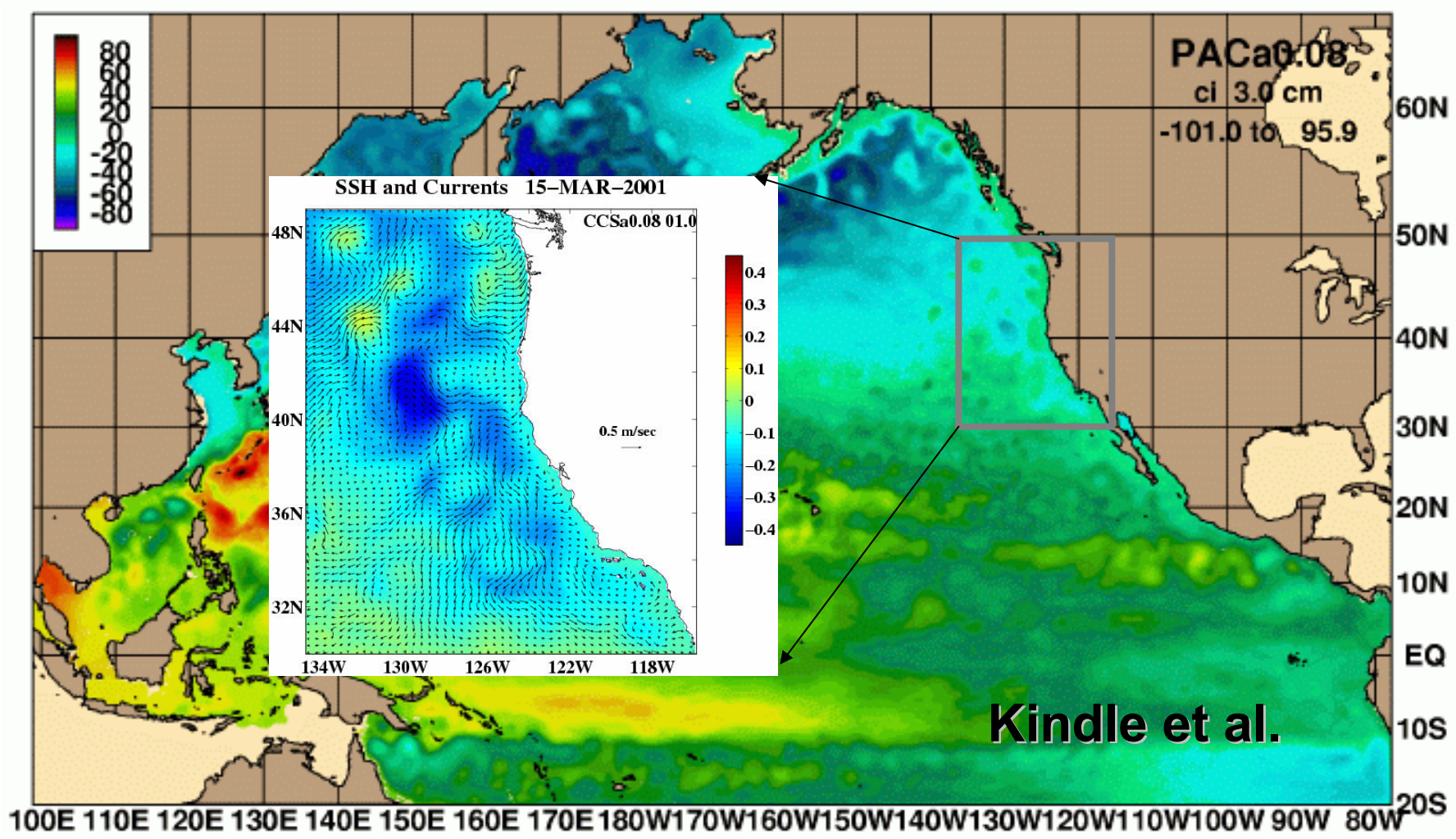

Other coastal/regional applications

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- Hogan, Zamudio, He, deRada, Yaremchuk, Wilkin, Zhao, May, Cherubin, Weisberg, etc.

Roadmap

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- Data distribution (FY04-FY08)
  - Are available to the community at large within 24 hours via Live Access Server (LAS), ftp, and OPeNDAP
  - Strong collaboration with NOAA/PMEL (S. Hankin), OPeNDAP (P. Cornillon), and U. of Miami (A. Srinivasan) to enhance the LAS and to provide an efficient distribution of the model outputs
  - New web site: http://www.hycom.org

Posters

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- Data analyses in support of WFS modeling — A. Alvera-Azcarate
- The TOPAZ system and applications — L. Bertino
- High-resolution ensemble forecasting in the Gulf of Mexico — L. Bertino
- The relative impact of the cold versus warm paths in a 1/3º implementation of HYCOM in the Atlantic from 62ºS to 60ºN — E. Campos
- When HYCOM meets the Persian Gulf -- An application of HYCOM in coastal seas — F. Yao
- Ecosystem and population connectivity using HYCOM outputs — L. Cherubin
- HYCOM and hurricanes: An update — G. Halliwell
- Eddy evolution and the topographic effect — K. Hyun
- HYCOM lateral boundary conditions for coastal southern California NCOM — P. May

Posters

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- Freshwater natural boundary conditions — M. Magaldi
- Coupling HYCOM to WRF — J. Michalakes
- The global CCSM3-HYCOM coupling system — G. Peng
- CFC-11 emissions in the coupled GISS GCM — A. Romanou
- Sensitivity to vertical mixing schemes in the coupled GISS/HYCOM climate model — S. Sun
- Coupling the WFS coastal ocean with the estuaries — R. Weisberg
- Northeast North America shelf heat and freshwater transport — J. Wilkin
- Upper ocean response to 2002 hurricanes Isidore and Lili in tandem using HYCOM — W. Zhao

This meeting

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- Take advantage of the collective effort to reflect on where we are and to prepare next year's implementation plan.
- To be achieved via two series of breakout sessions, one this afternoon and another one tomorrow, using the oral and poster presentations as background.

Tuesday 4-6pm

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- After the group photo, division in 3 groups
  - A-H names meet in the CIMAS conference room (3rd floor) (follow Rainer Bleck)
  - I-R names meet in the AMP conference room (1st floor) (follow Joe Metzger)
  - S-Z names meet in the MPO conference room (3rd floor) (follow Bill Schmitz)

Tuesday 4-6pm

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- Groups to address the following topics
  - 4pm to 5pm: Performance of global and basin scale simulation – What are the metrics?
  - 5pm to 6pm: Data assimilation: Where are we? What are the minimum requirements? What is needed for evaluation?
- Groups to report in plenary session Wednesday morning at 8:30am

Wednesday 4-6pm

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Division in three working groups on

a) Measure of performance of basin and global runs with and without data asimilation (Lead: J. Metzger – MPO conference room)
b) Data assimilation (Lead: J. Cummings – CIMAS conference room)
c) Data distribution and open boundary conditions (Lead: S. Hankin – AMP conference room)

Wednesday 4-6pm

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- Define next year's goals and strategy
- Report in plenary session 11am on Thursday