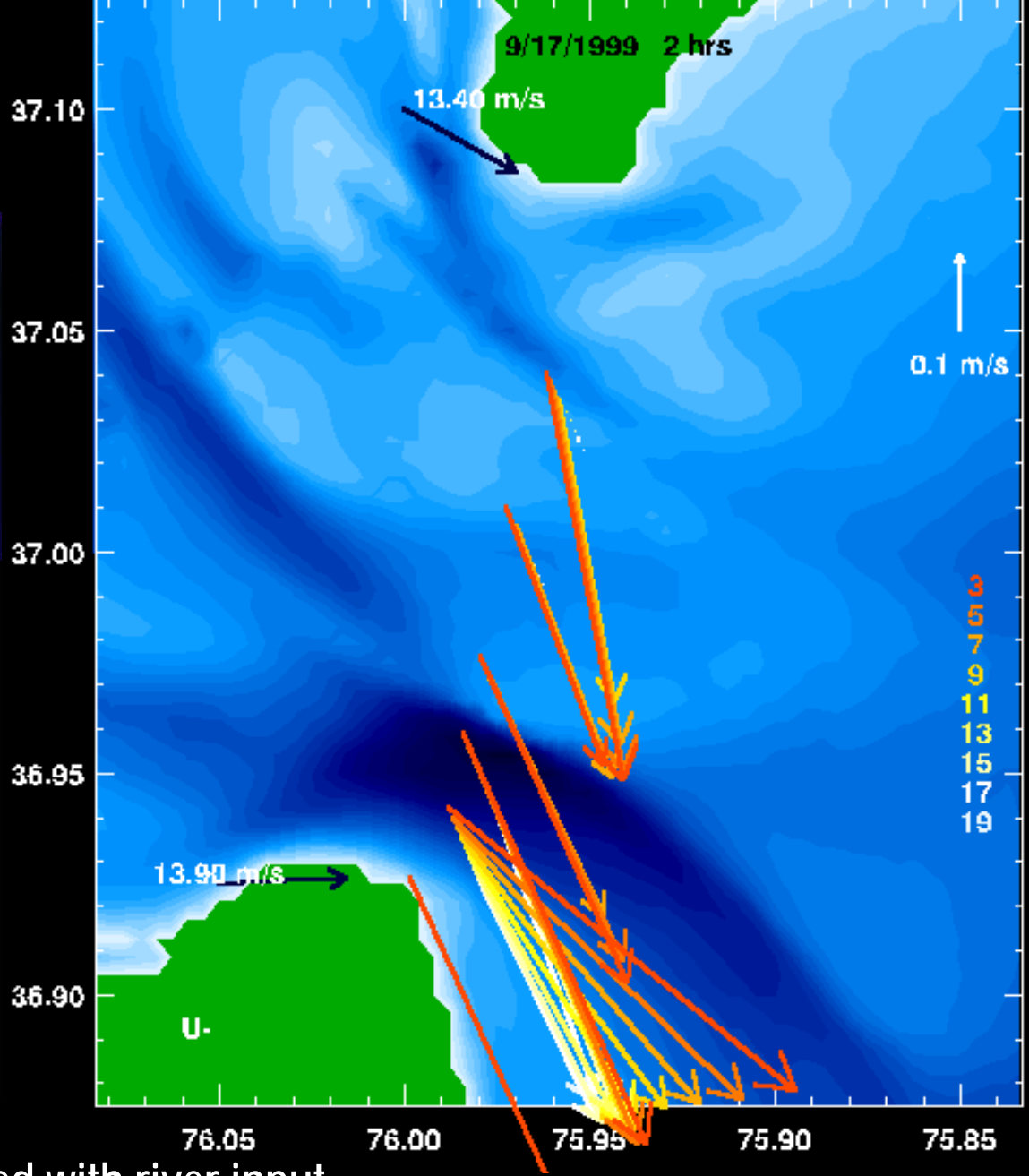


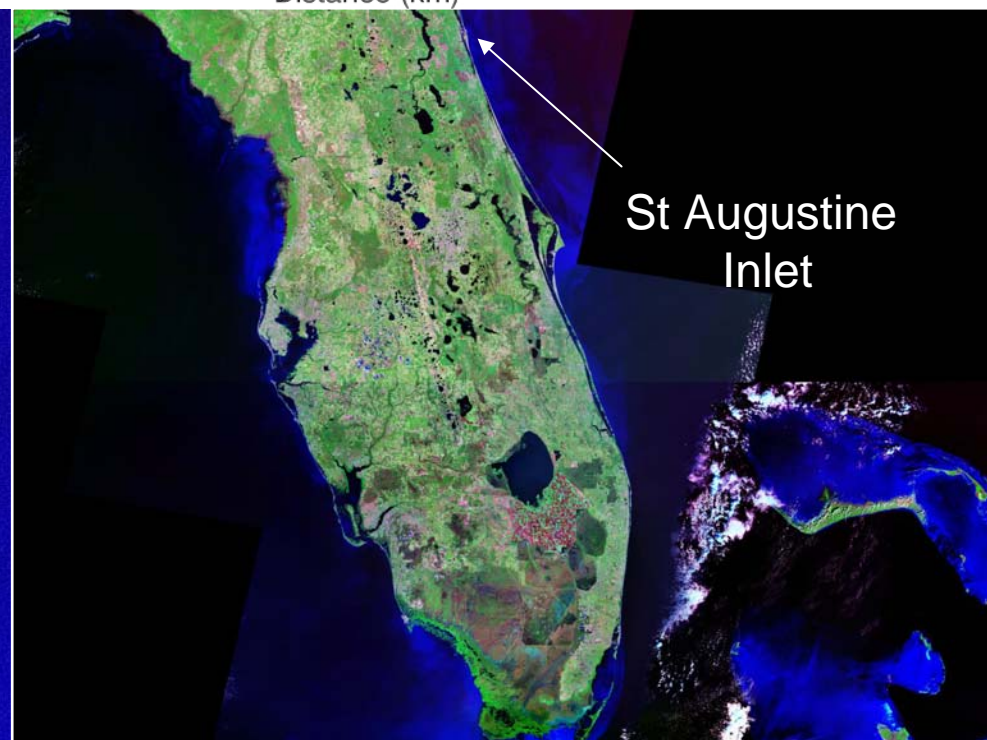
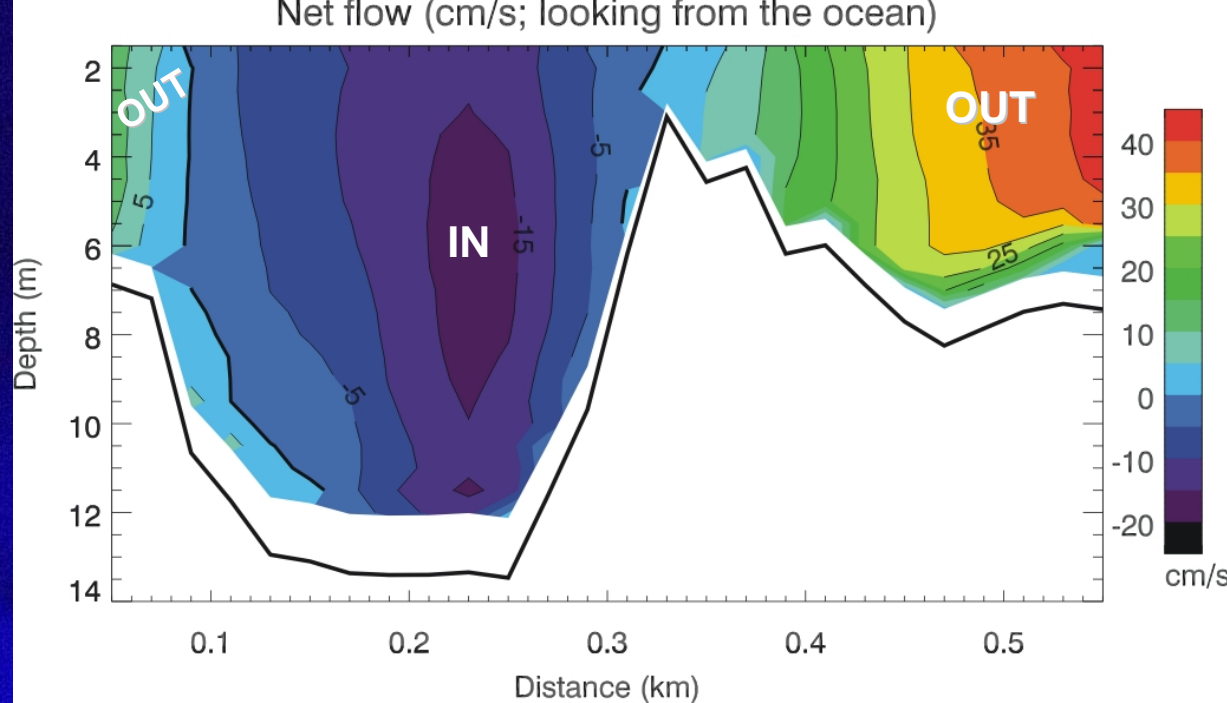
# **EXAMPLES OF OBSERVATIONAL, MODELING AND CYBERINFRASTRUCTURE CAPABILITIES AT THE UNIVERSITY OF FLORIDA**

**Arnoldo Valle-Levinson, Peter Sheng  
Civil and Coastal Engineering Department  
University of Florida  
[arnoldo@ufl.edu](mailto:arnoldo@ufl.edu)**

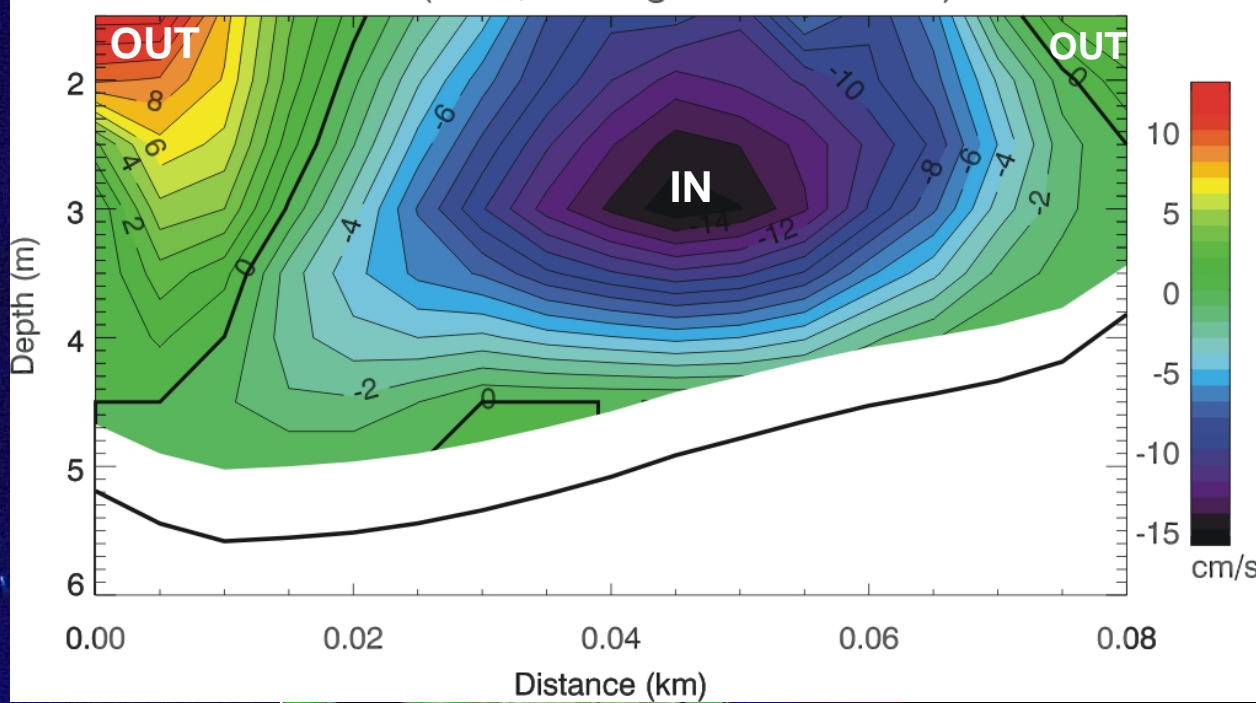
Hurricane Floyd, 1999  
Outflow from both *River Discharge* and *NW winds*



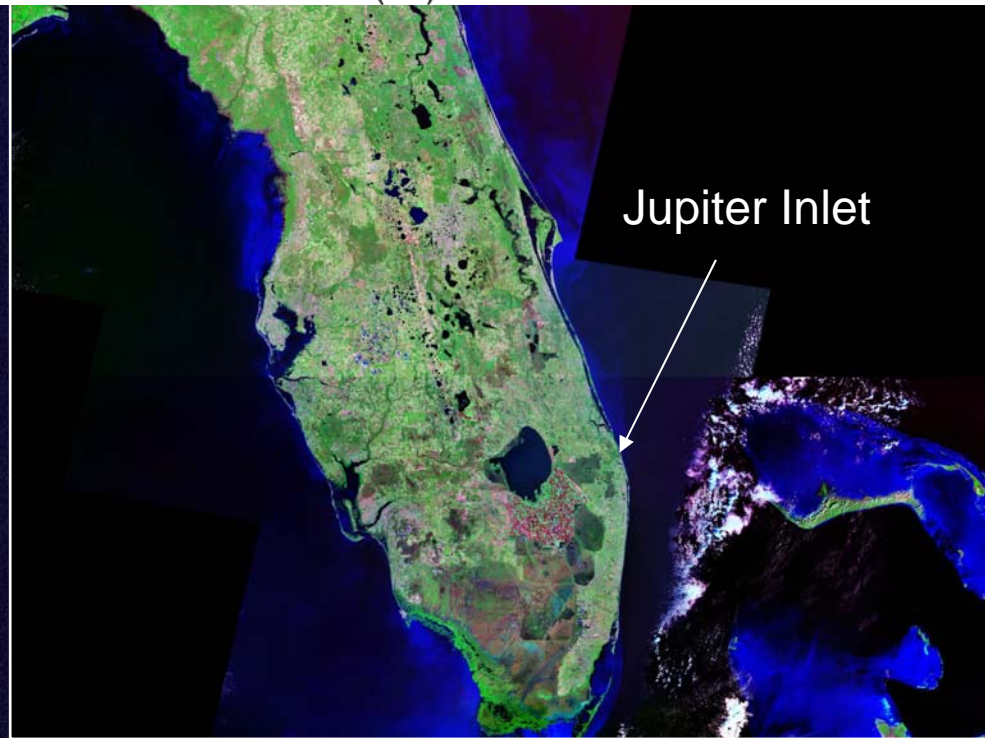
2 / 3 of volume outflow associated with river input  
1 / 3 to wind forcing



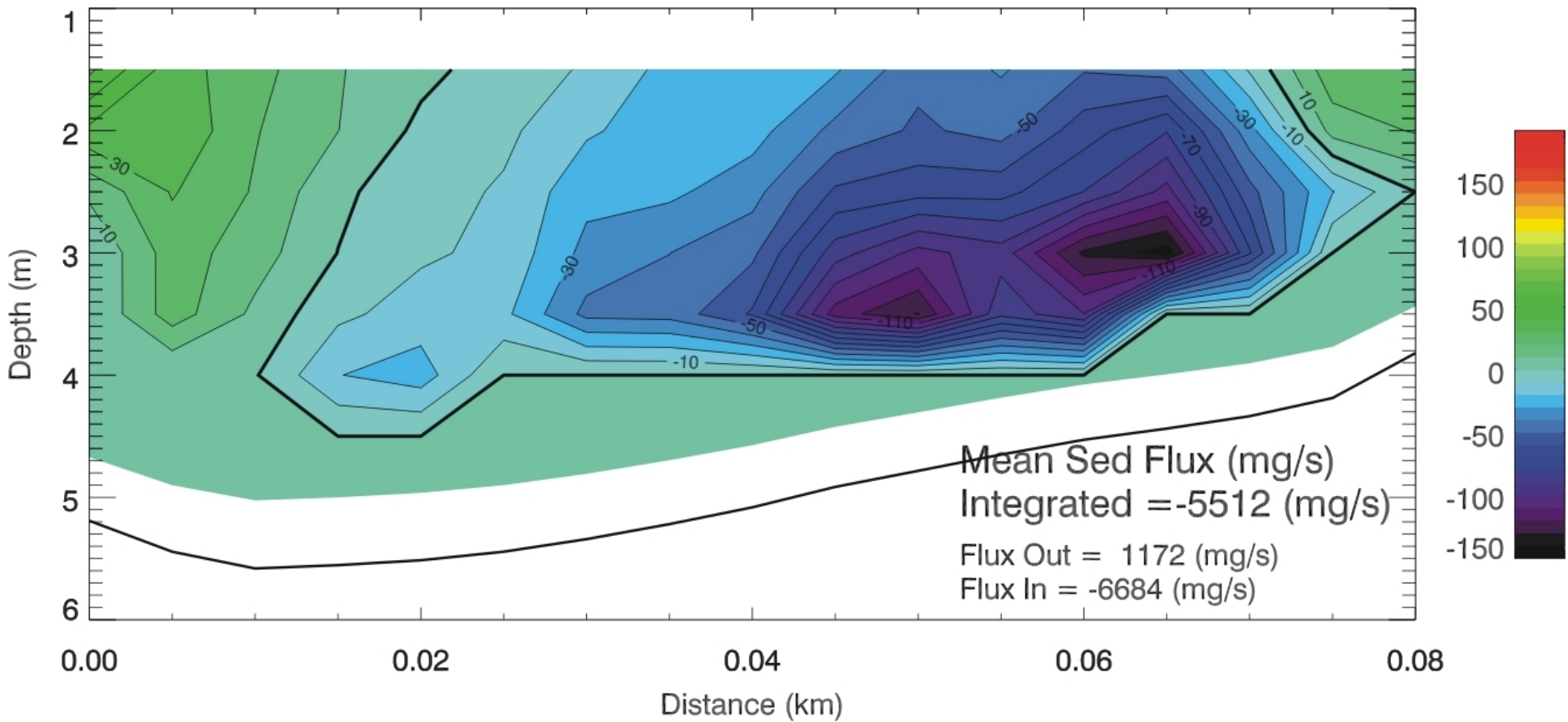
**St. Augustine Inlet location and cross-section of net exchange flow pattern. Red and yellow shades indicate regions of net outflow while blue shades denote regions of inflow.**



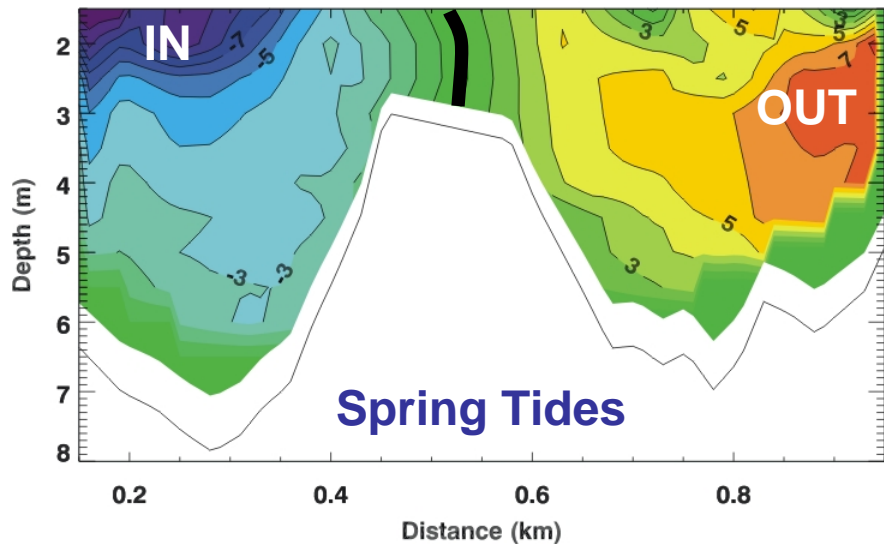
**Jupiter Inlet location and cross-section of net exchange flow pattern. Red and yellow shades indicate regions of net outflow while blue shades denote regions of inflow.**



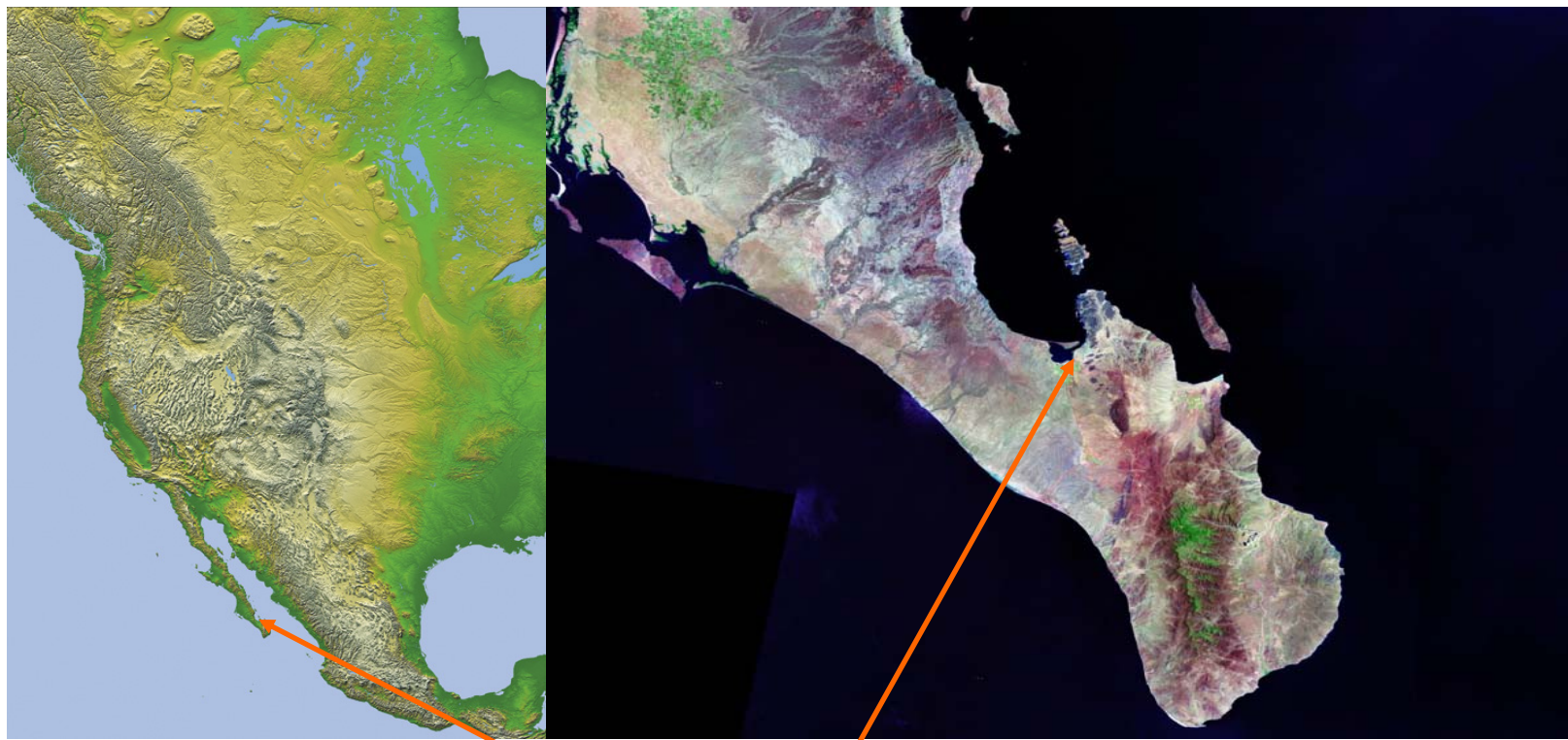
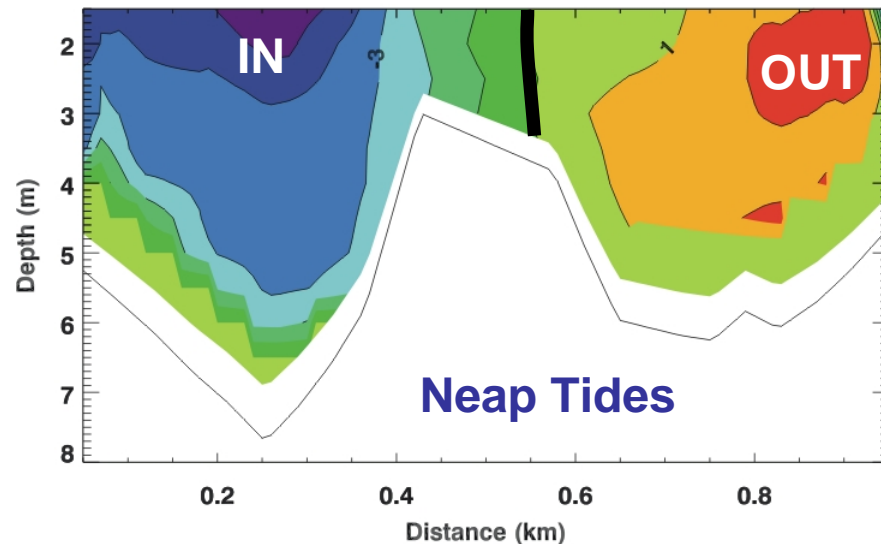
**Jupiter Inlet**



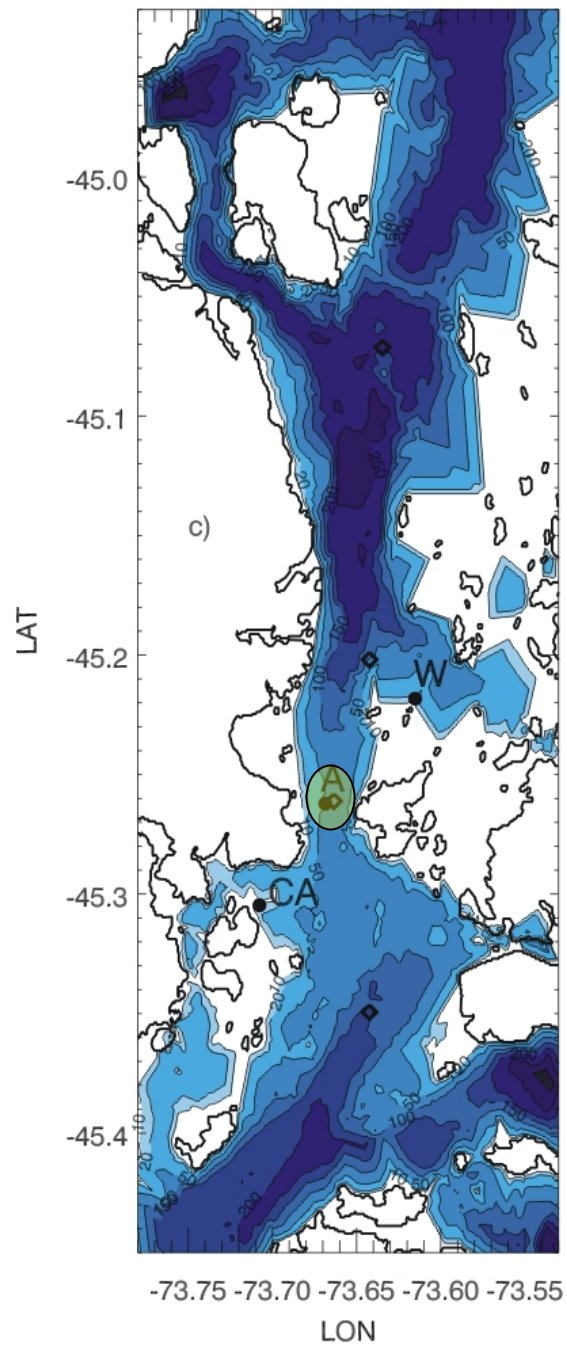
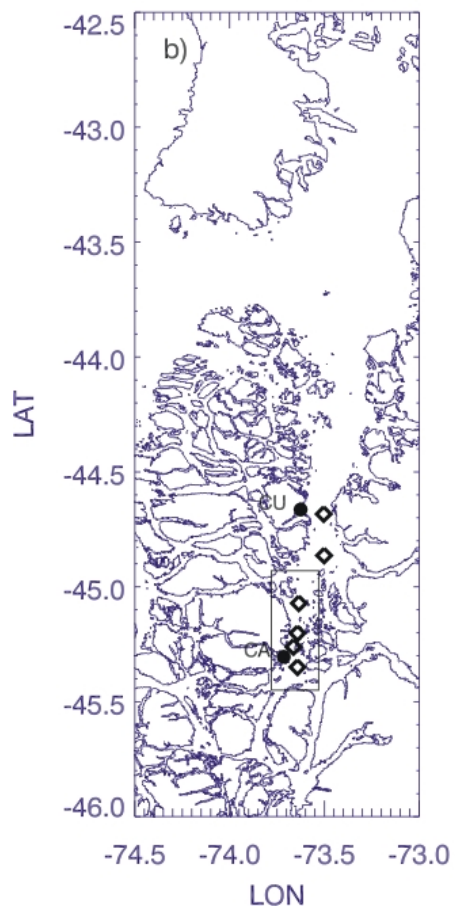
Principal-axis Flow (cm/s)

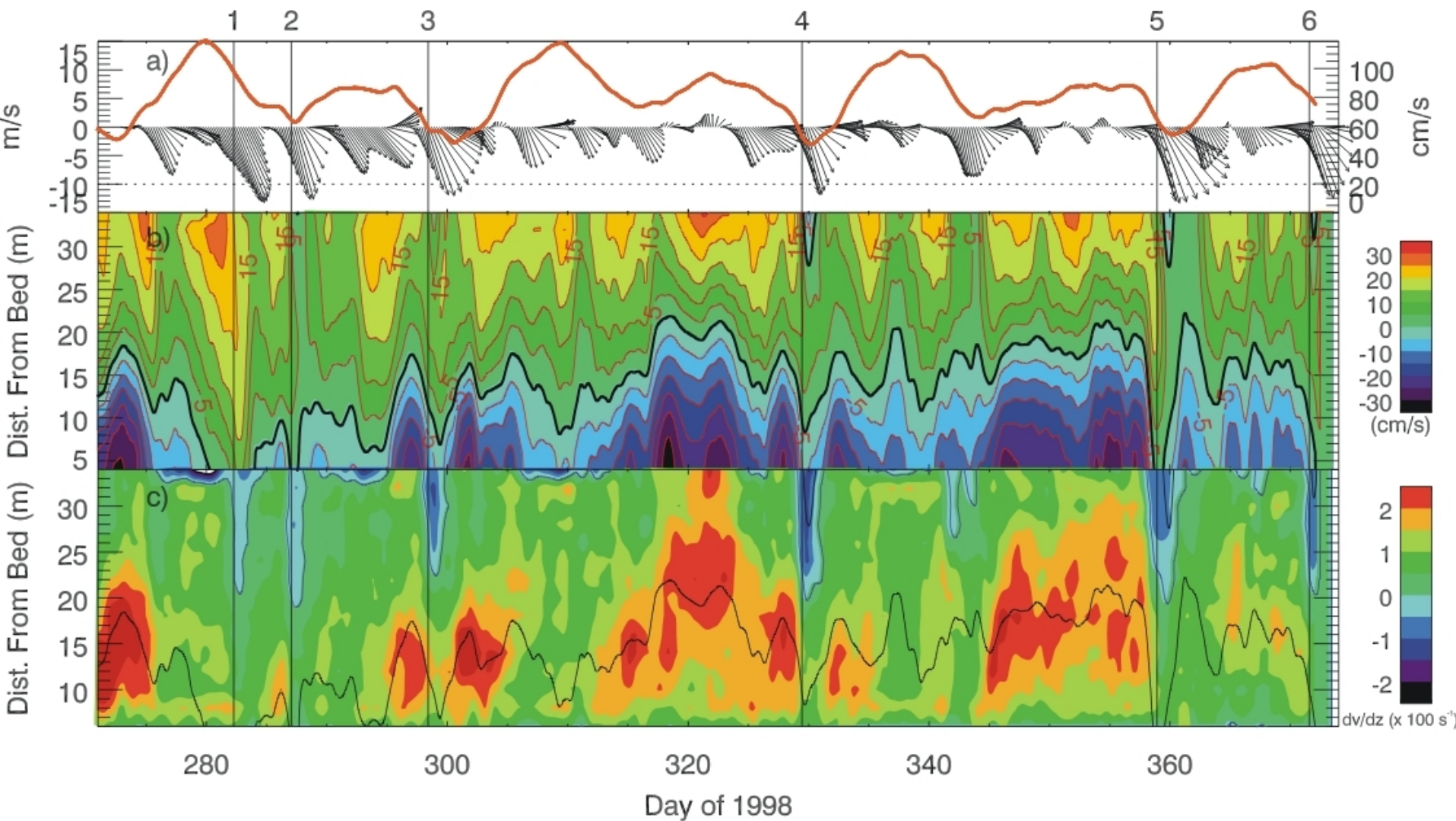


Principal-axis Flow (cm/s)



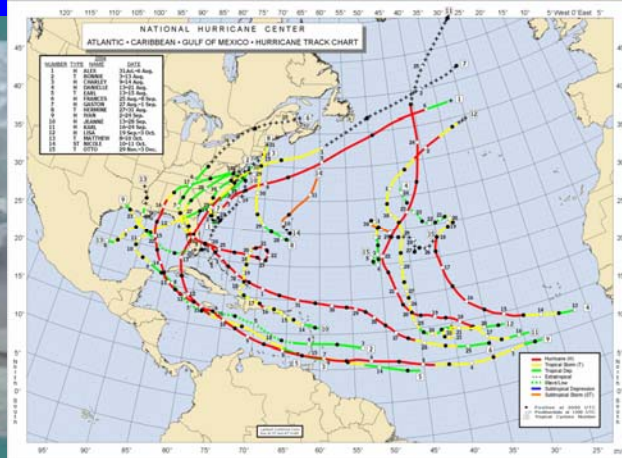
Ensenada de la Paz







# Simulation and Forecasting of Hurricane-Induced Storm Surge, Wave, and Inundation in Coastal Regions



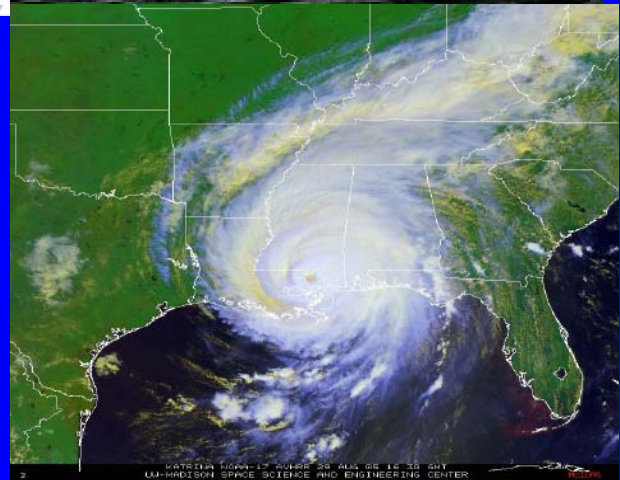
Peter Sheng

Justin Davis, Vladimir Paramygin, Vadim Alymov, Yangfeng Zhang

Civil & Coastal Engineering Department  
Renato Figueiredo et al.

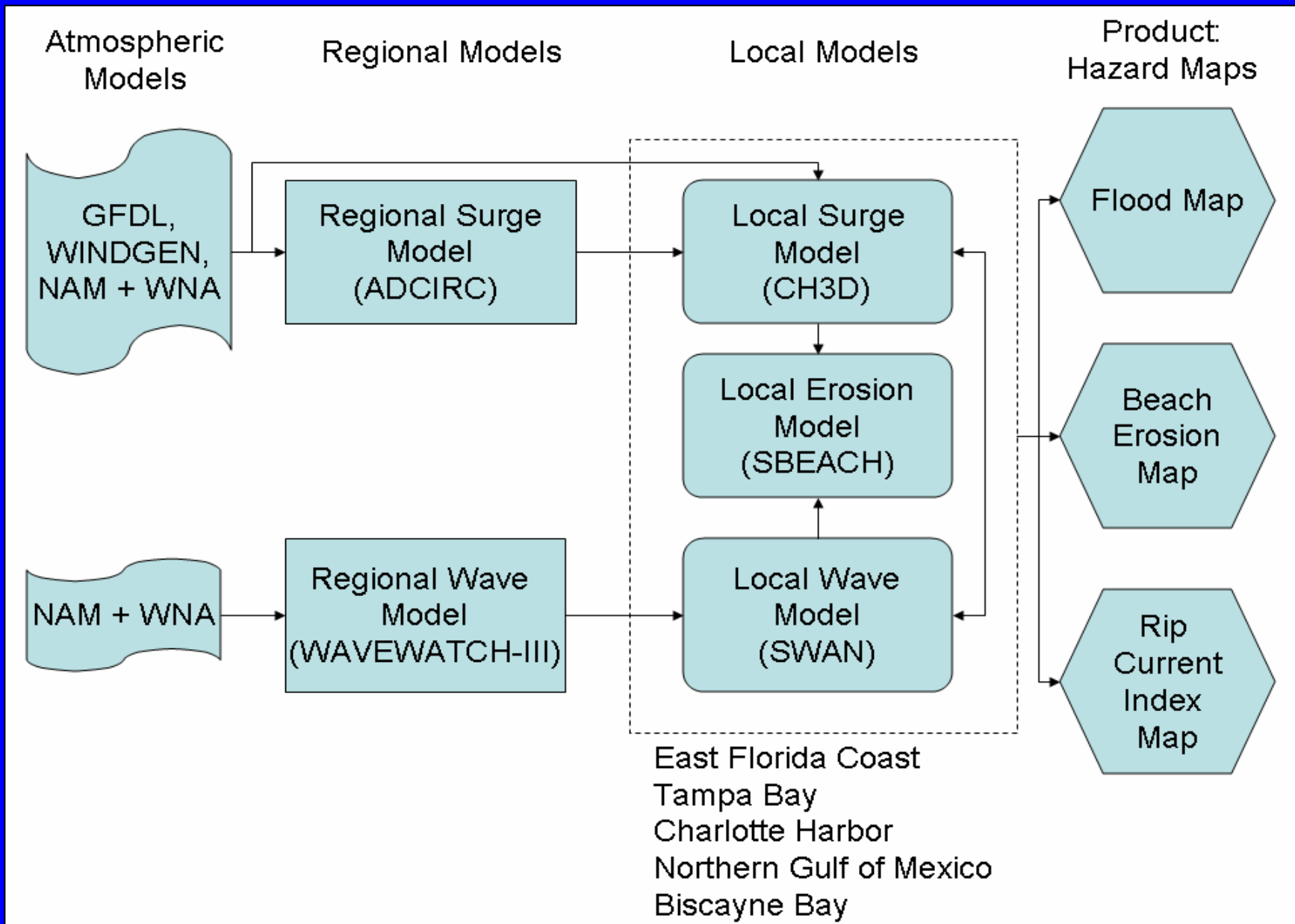
ACIS

University of Florida

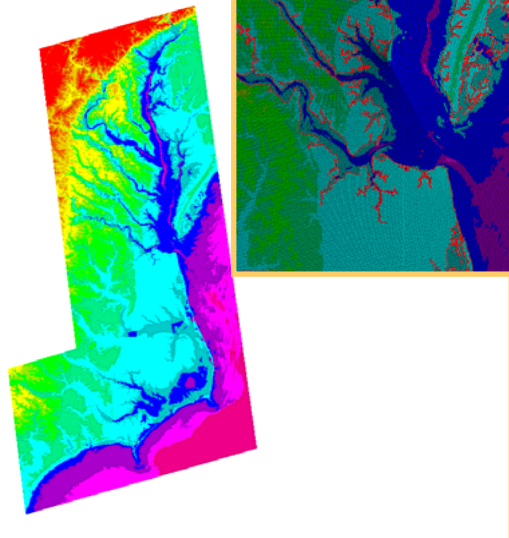
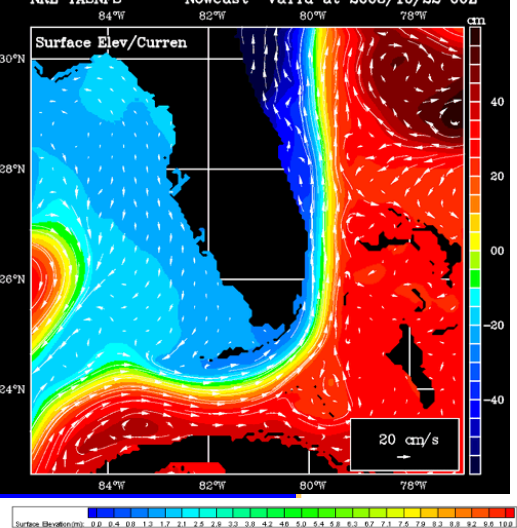


Sponsors: Florida Sea Grant, NOAA, ONR, USDOT, SFWMD, NSF, SWFWMD, SJRWMD

# An Integrated Storm Surge Modeling System: CH3D-SSMS



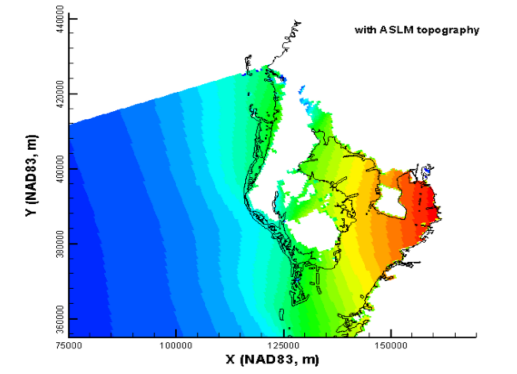
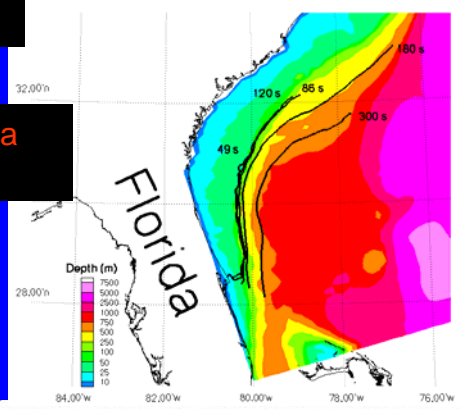
We can use CH3D, UnCH3D, ADCIRC, SLOSH for surge.



CH3D is being coupled with ROFS and NCOM

Columbia debris trajectories

North and Central Florida Atlantic Coast OOPS



CH3D  
Sheng et al.  
UF  
<http://www.ch3d.coastal.ufl.edu>

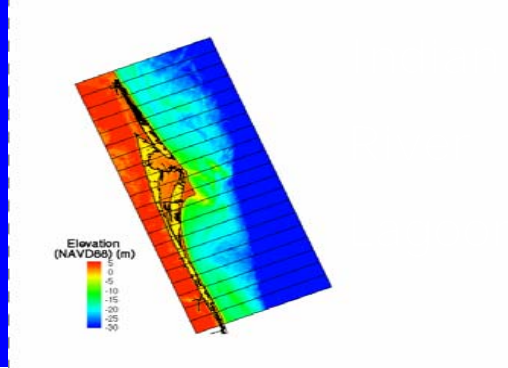


Figure 5. Storm surge elevation over the flooded area for Case 1. The snapshot is taken on 09/24, 03:00. White color represents dry area.

A fine grid (194 x 148) for Florida Bay

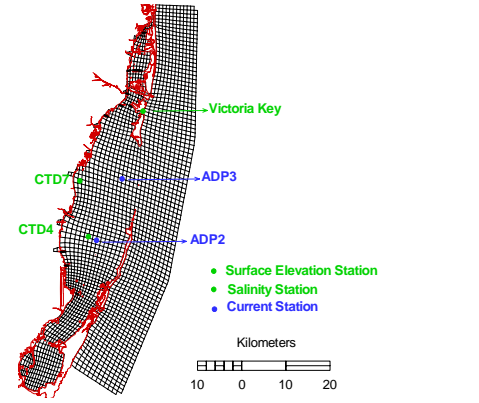
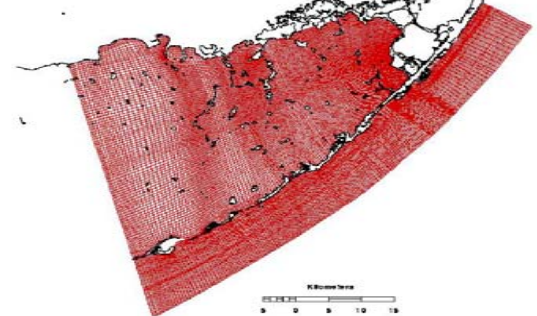
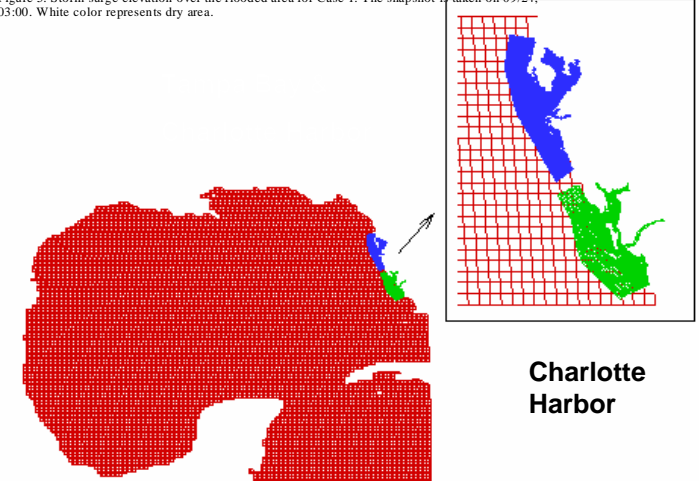


Figure 3 - Boundary-fitted fine grid (194x148 cells) used for numerical simulations of Florida Bay circulation.

Several High Resolution CH3D Grids imbedded inside Unstructured Triangular Grid (~30,000 nodes) for Gulf of Mexico and Western Atlantic



Image © 2006 MDA EarthSat

© 2005 Google

Streaming ||||| 100%

Eye alt 3289.66 mi

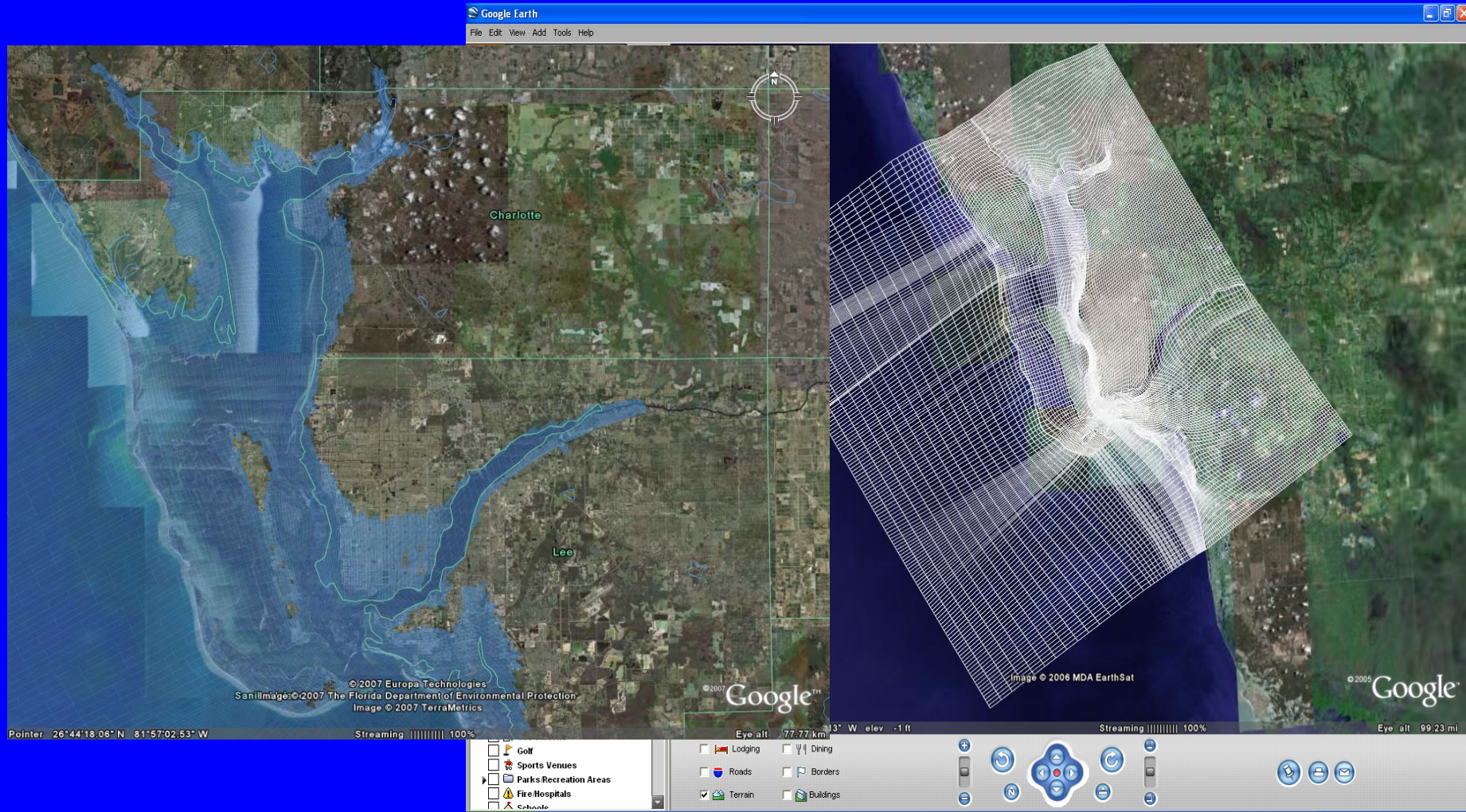


- Shopping Malls
- Major Retail
- Movie/DVD Rentals
- Grocery Stores
- Pharmacy

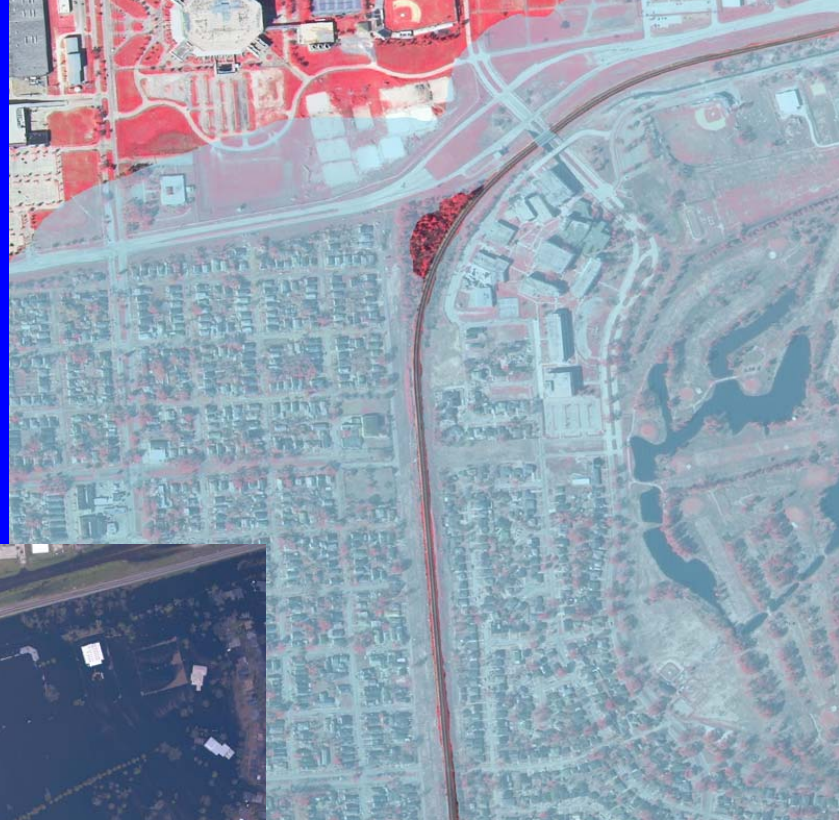


Image © 2006 MDA EarthSat

# Hurricane Charley Inundation Map

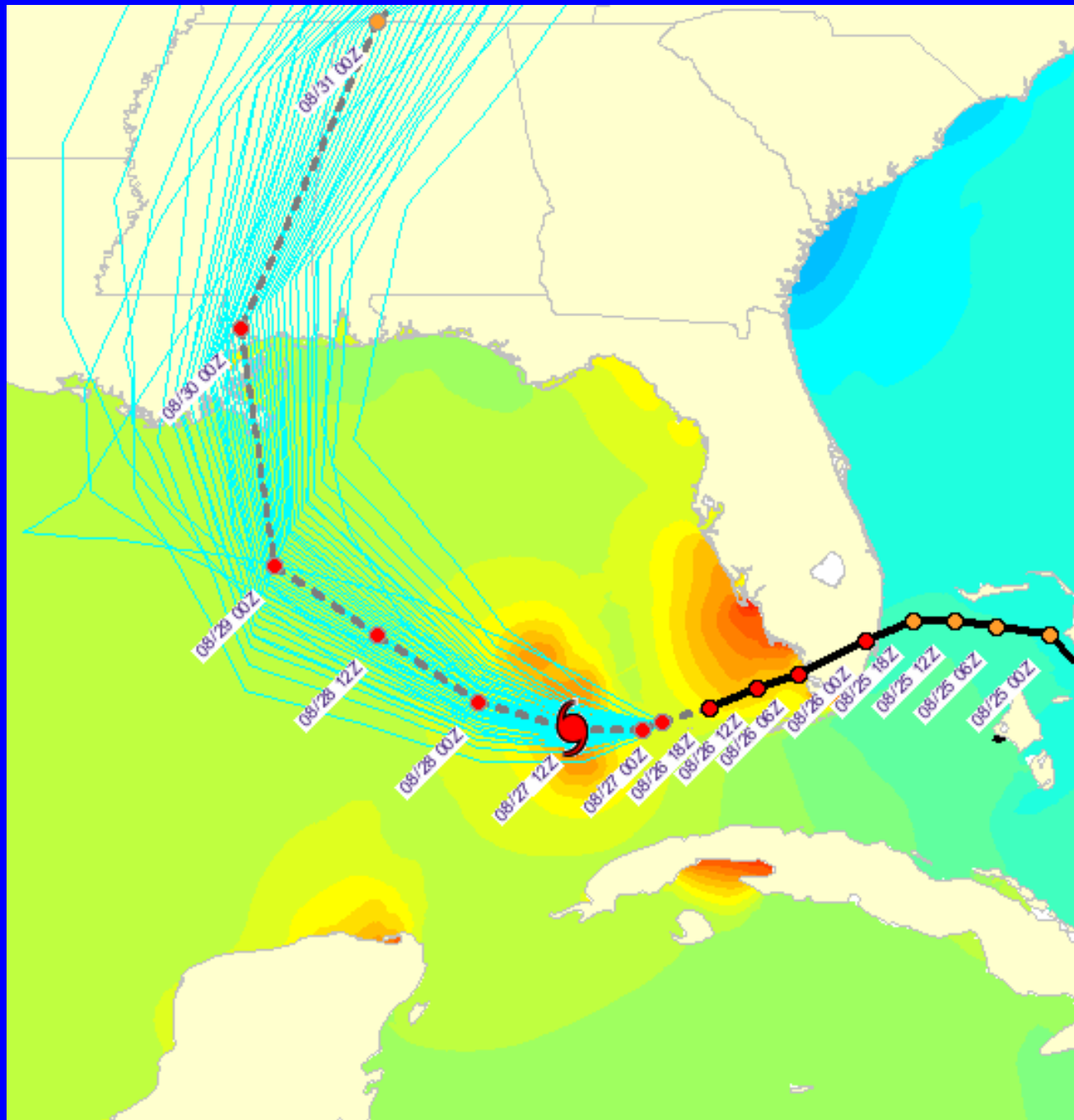


Pre-  
Katrina

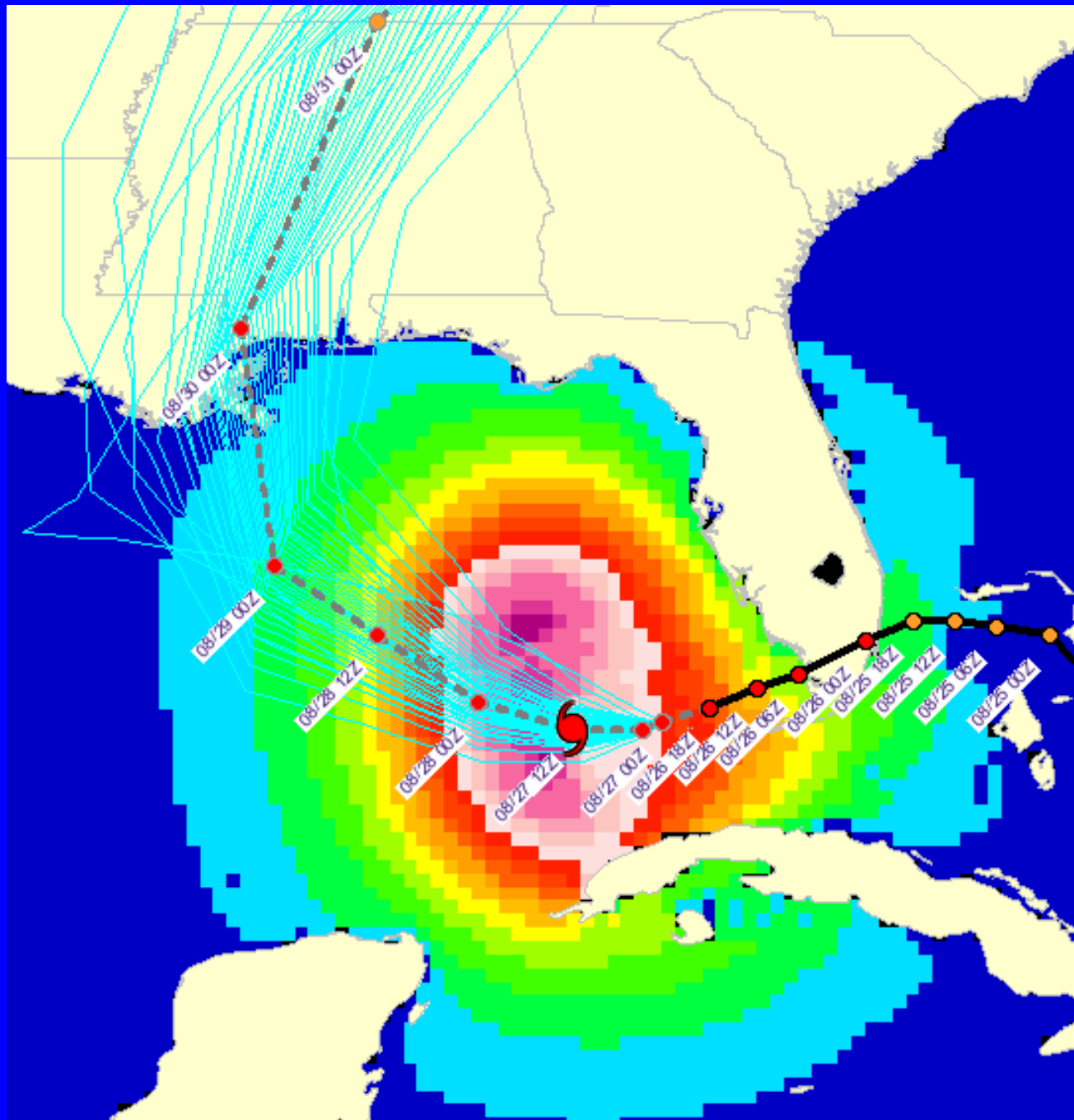


Katrina Inundation Map

CH3D Results



SADCec95-UNC elevMOE t=20050827T1200 to=20050827T0000 WANAFc01-11,21-51-UFL sto=12 run=T30

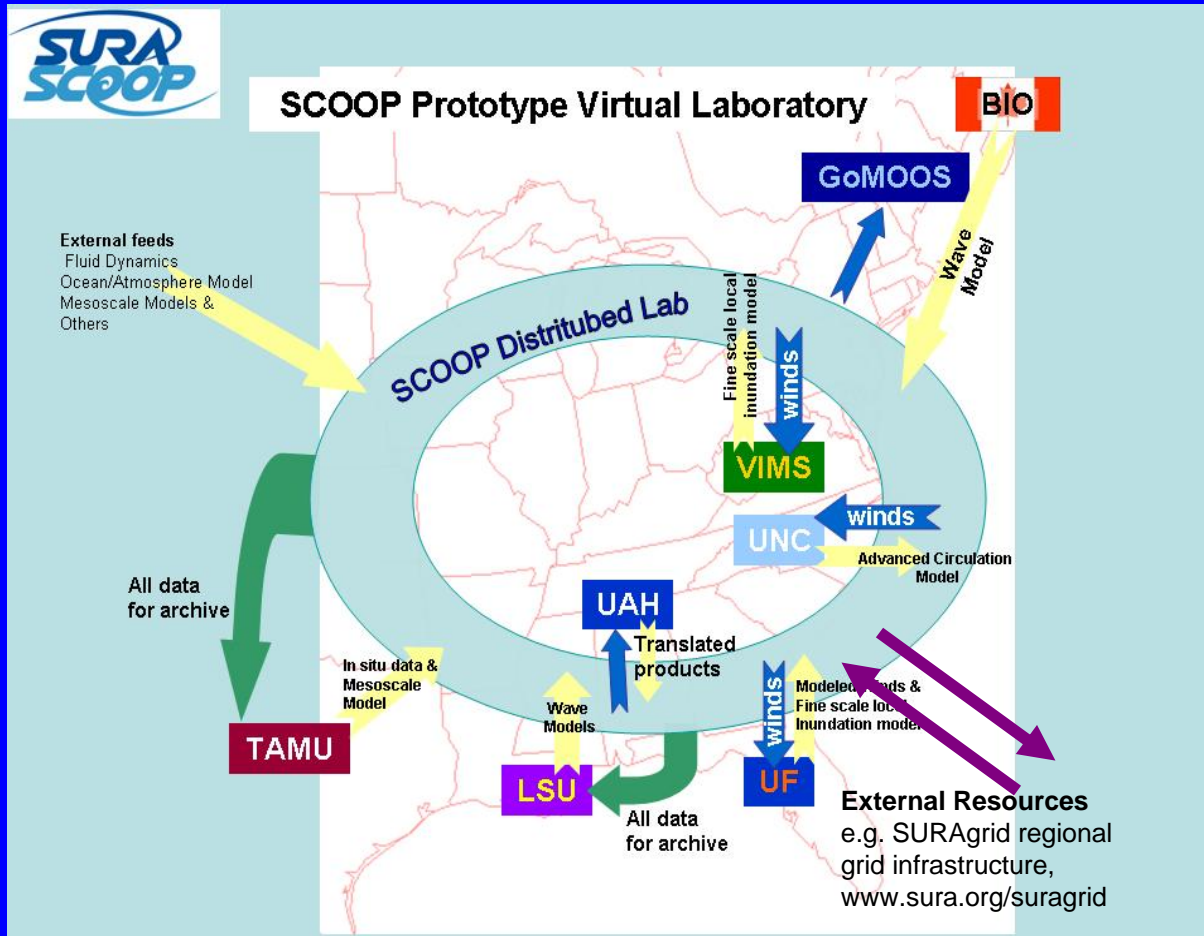


SWW3LLMF-B10 hsMOE t=20050827T1200 to=20050827T0000 WANAF01-11,21-51-UFL sto=12 run=T300



# SCOOP Prototype Distributed Laboratory

Funded by NOAA & ONR



## 2005/2006 SCOOP Implementation Team



Bedford Institute of Oceanography



Gulf of Maine Ocean Observing System



Louisiana State University



Texas A&M Research Foundation



University of Alabama, Huntsville



University of Florida



University of North Carolina



Virginia Institute of Marine Science



Renaissance Computing Institute



MCNC



Southeastern Universities Research Association



Favorites Home x citeam\_dev\_mapserver x nano\_appliance x test vm x xpsex x



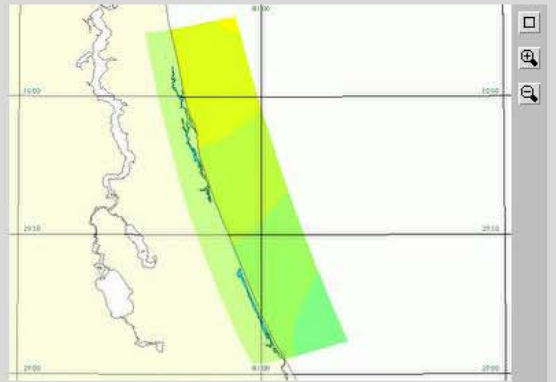
CH3D-GTM

File



Simulate

Result: Water level (wl) animated sequence



Starting Time: 09/07/2004

Release Location: Bings Landing

Simulation Length (Days): 1

Include Wind?: yes

Include River Discharge?: yes

Execute on the Grid?: no

Water level = 2

1 result Parameters... Clear

Start root@localhost: /ho... griduser@localhost... CH3D-GTM

12:50PM

VMware Fusion File Edit View Virtual Machine Window Help

GridAppliance

Power Off Suspend Power On Settings Full Screen Ethernet Ethernet 2

griduser@C18000011: /home/griduser

```

C128000023.ip LINUX INTEL Claimed Busy 1.000 631 6+02:51:14
C128000024.ip LINUX INTEL Claimed Busy 1.000 631 5+18:43:03
C128000025.ip LINUX INTEL Claimed Busy 1.000 631 5+01:18:04
C128000026.ip LINUX INTEL Claimed Busy 1.000 631 4+15:28:45
C128000027.ip LINUX INTEL Claimed Busy 1.000 631 5+00:14:04
C128000028.ip LINUX INTEL Claimed Busy 1.000 631 3+03:33:36
C128000029.ip LINUX INTEL Claimed Busy 1.030 631 2+11:33:32
C128000031.ip LINUX INTEL Claimed Busy 1.000 631 0+02:00:32
C128000032.ip LINUX INTEL Claimed Busy 1.000 631 5+07:10:26
C128000033.ip LINUX INTEL Claimed Busy 1.000 631 5+23:43:50
C128000034.ip LINUX INTEL Claimed Busy 0.300 631 0+00:01:33
C128000035.ip LINUX INTEL Claimed Busy 1.000 631 4+15:30:48
C128000036.ip LINUX INTEL Claimed Busy 1.010 631 4+00:02:39
C128000037.ip LINUX INTEL Claimed Busy 1.000 631 3+16:29:35
C128000038.ip LINUX INTEL Claimed Busy 1.000 631 2+19:29:12
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C128000040.ip LINUX INTEL Claimed Busy 1.000 631 0+05:00:19
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C128000042.ip LINUX INTEL Claimed Busy 1.000 631 5+21:11:03
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C128000058.ip LINUX INTEL Claimed Busy 1.010 631 1+21:54:24
  
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Total Dwner Claimed Unclaimed Matched Preempting BackFill

INTEL/LINUX	52	0	52	0	0	0
Total	52	0	52	0	0	0

griduser@C18000011: ~\$

debian 0 griduser@... 12:12:47 AM

To direct input to this virtual machine, click inside the window.

ACIS  
Grid Virtual Appliance

In-VIGO Team - U. Florida

H: 28°  
Miami  
L: 18°  
20°

TUE WED THU FRI SAT SUN  
26° 28° 28° 30° 27° 29°

Calculator

7 8 9 × ÷  
4 5 6 - +  
1 2 3 =

AM  
MIAMI

Wednesday  
7

February 2007

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	1	2	3
4	5	6	7	8	9	10

Dashboard

# Grid Appliance

Current Statistics

Home >> map

**Main Menu**

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**Documents**

- Published Work
- Grid Appliance Readme
- User Interface Readme

**About**

- Grid Appliance
- The Team
- Condor

**Login Form**

Username:

Password:

Remember me

Map data ©2007 TeleAtlas - Terms of Use

Powered by Google

Last update: Sun Mar 4 15:34:50 EST 2007  
Node count: 75

If you can not see the above map make sure you access the website through the proper address here