SURA Coastal Ocean Observing and Prediction (SCOOP) Program

Guy Almes <galmes@tamu.edu>
Texas A&M University

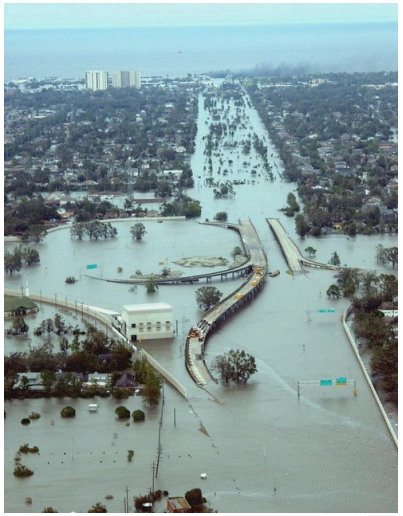
(using slides from several SCOOP partners)

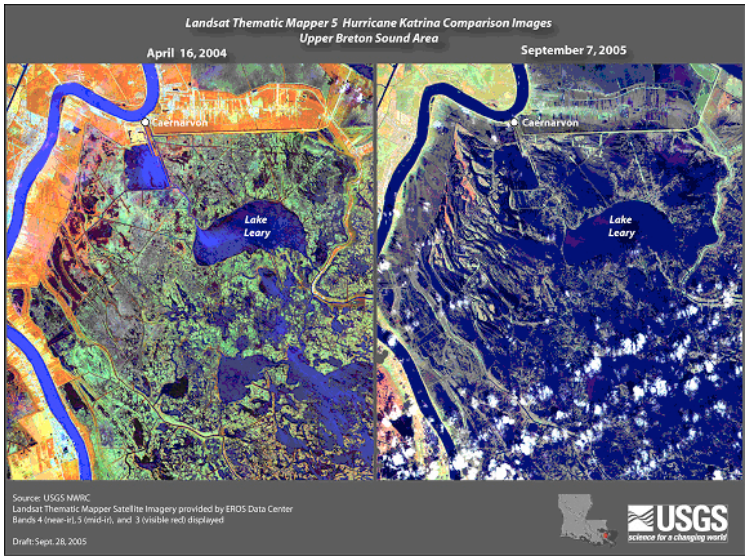
MCNC
Renci Renaissance Computing Institute
Louisiana State University LSU
UAH The University of Alabama in Huntsville
VIMS
GoMOOS
ATM
University of Florida The Foundation for The Gator Nation
North Carolina
BIO
SURAgrid

The Cost of Hurricane Katrina in 2005

About 1836 Lives Lost

$120 B in Property Damage

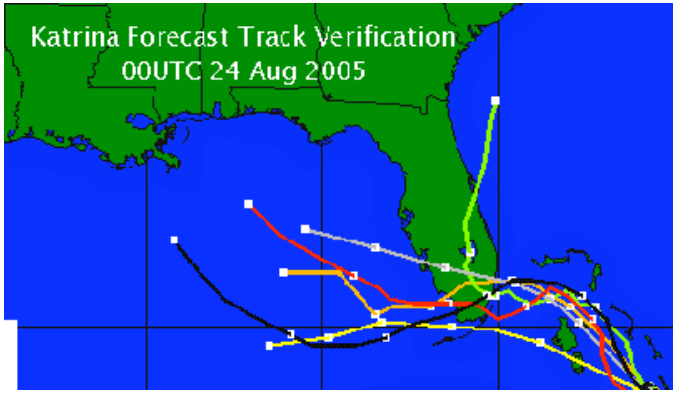




Katrina & Rita together caused about 570 $(km)^2$ of land loss in an already fragile ecosystem

50% of New Orleans population displaced

The Scientific Issue



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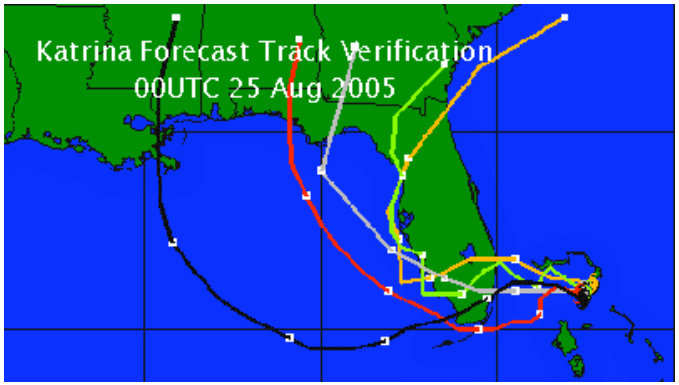

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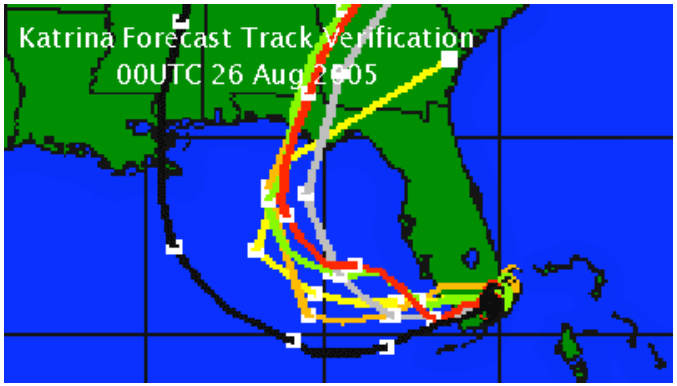

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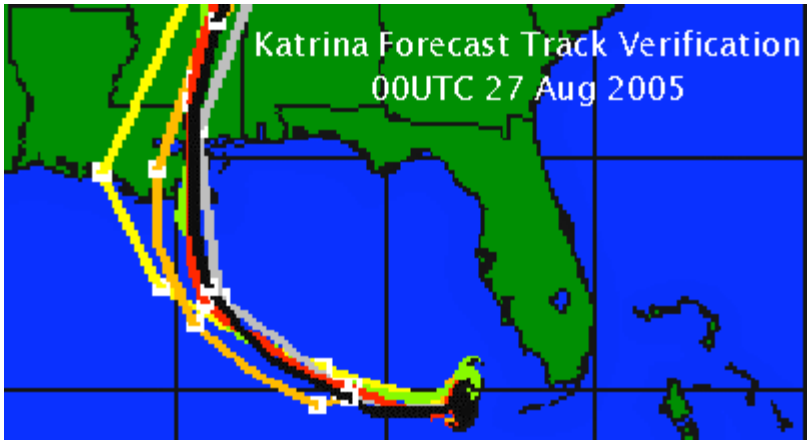

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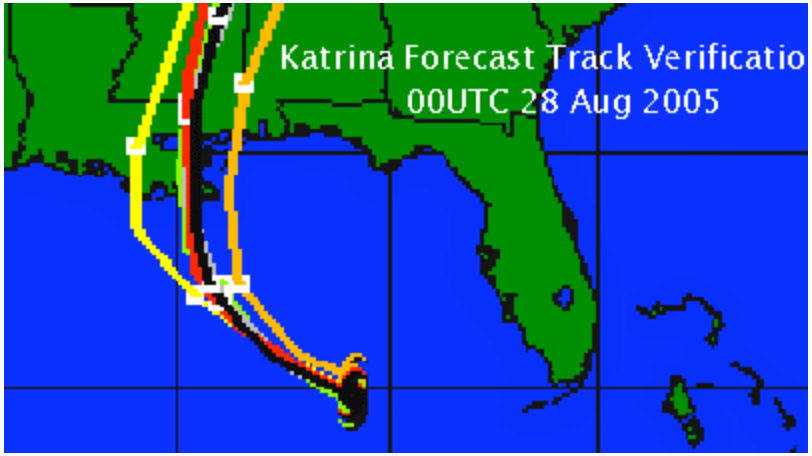
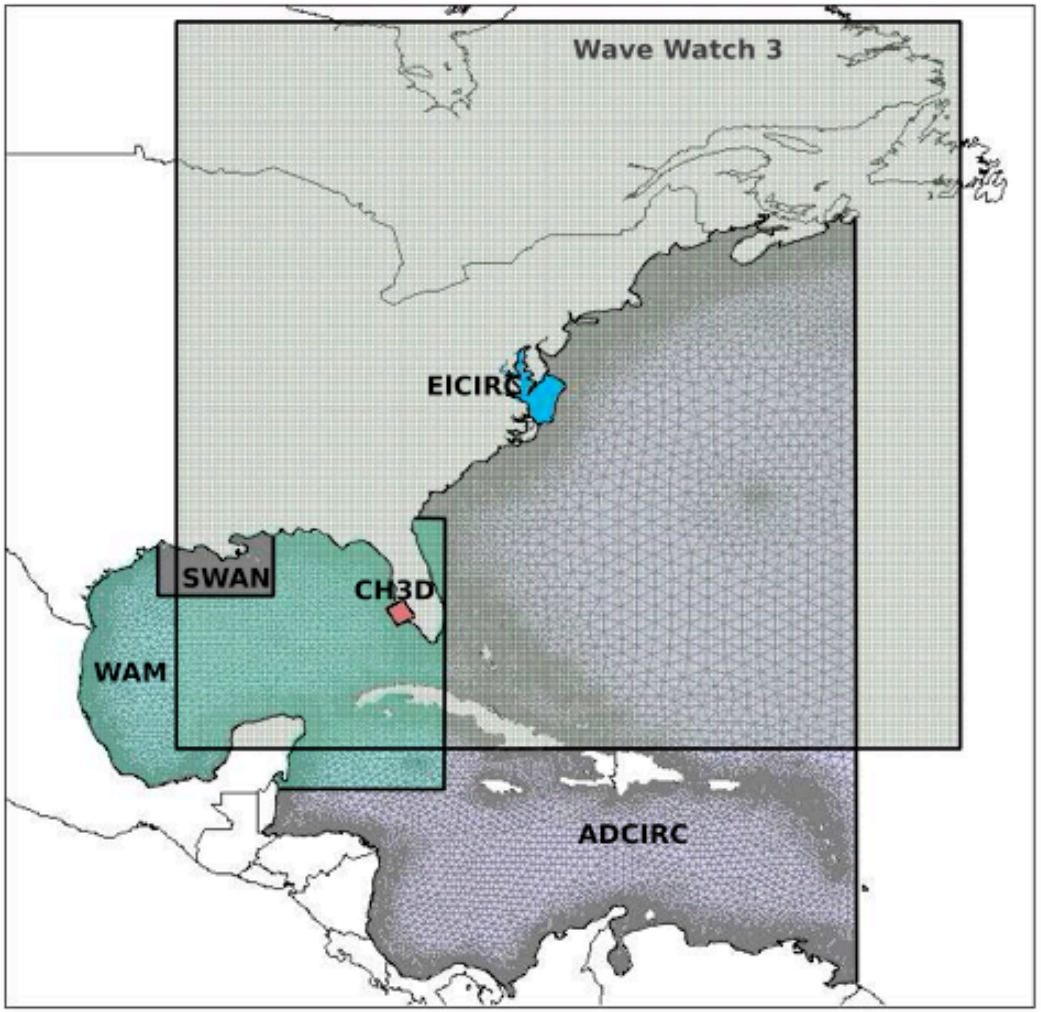


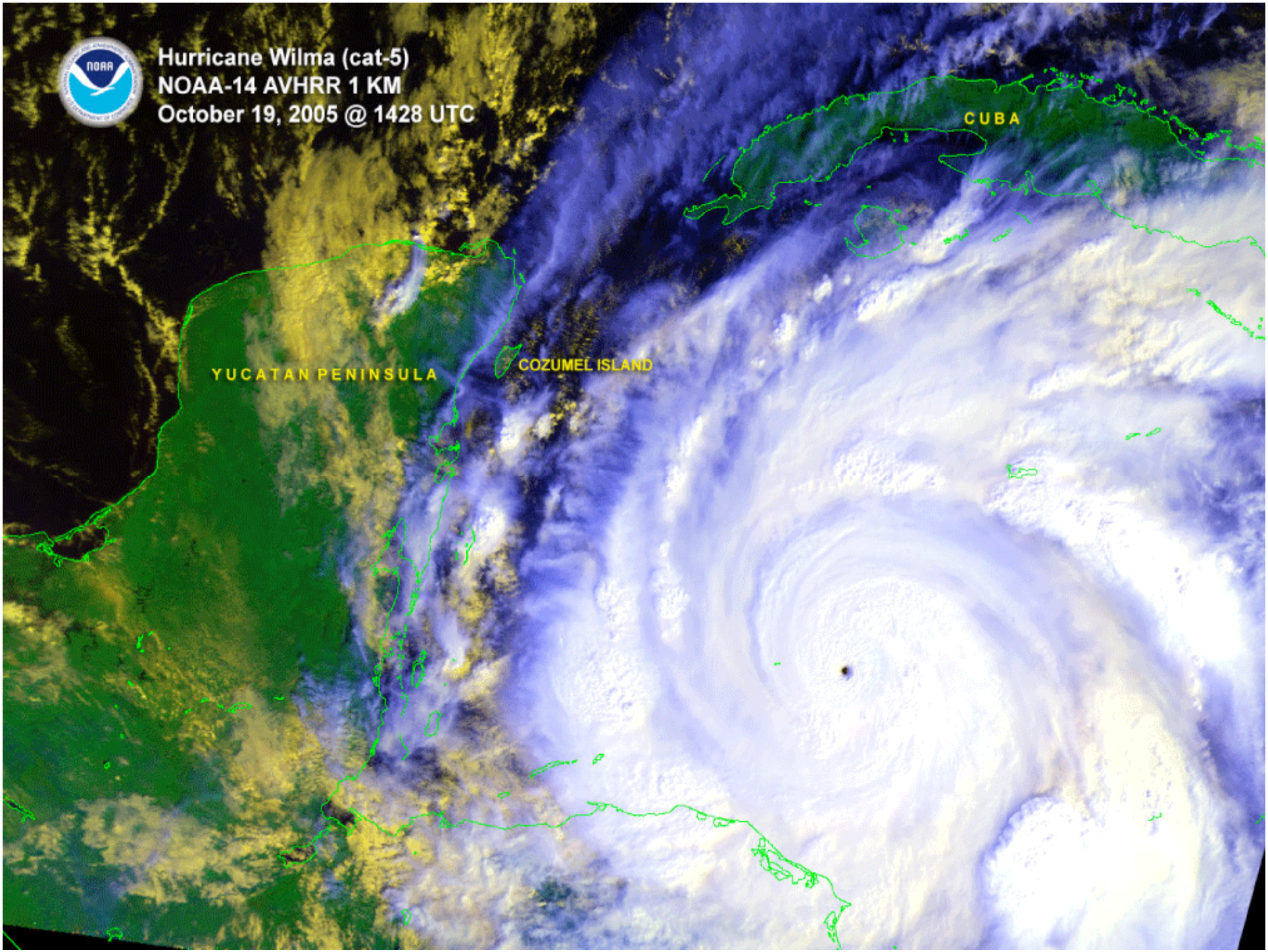
Ensemble of Numerical Grids

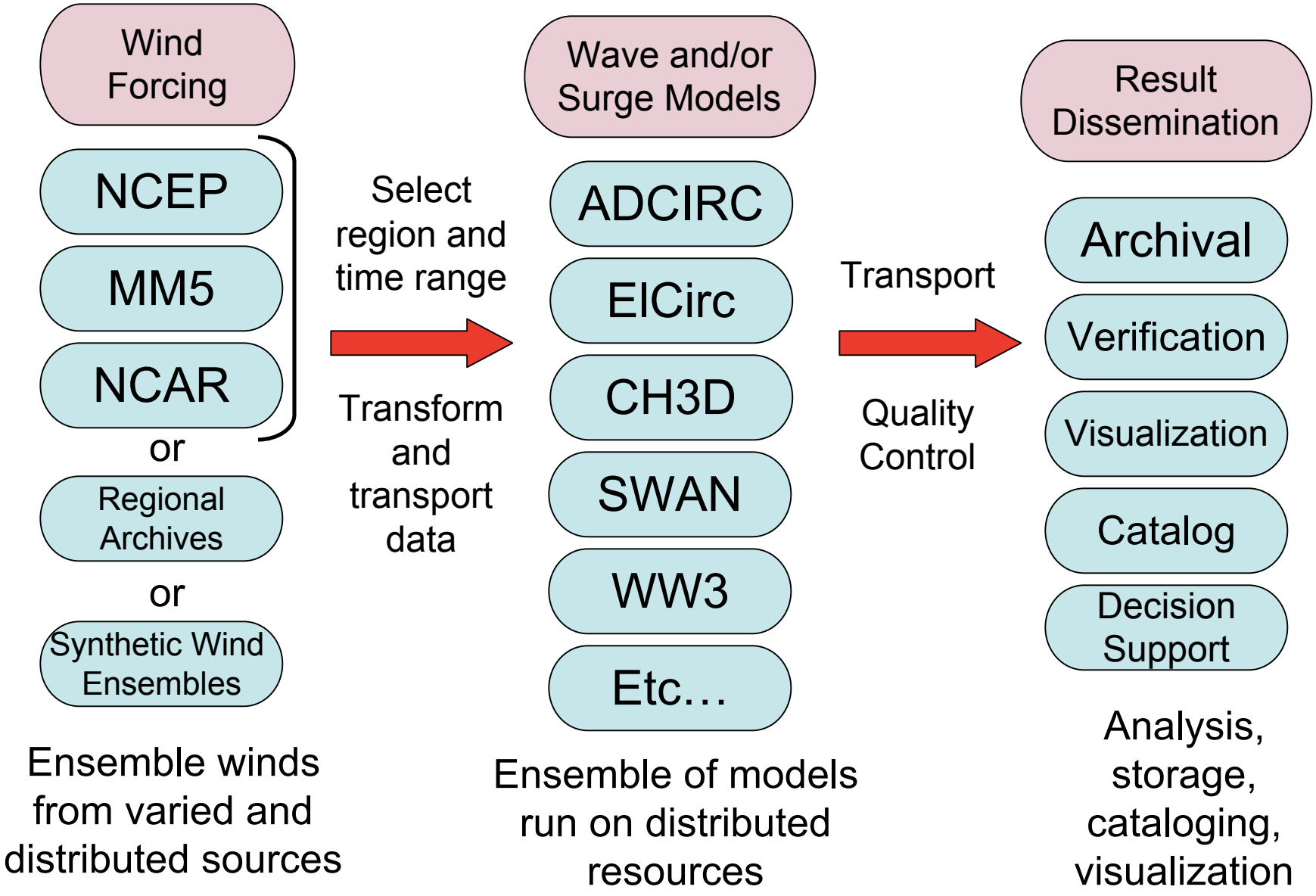
SCOOP runs a variety of coastal wave, surge, and water level models along the Atlantic and Gulf Coasts

Note: Hurricanes do not respect national boundaries!

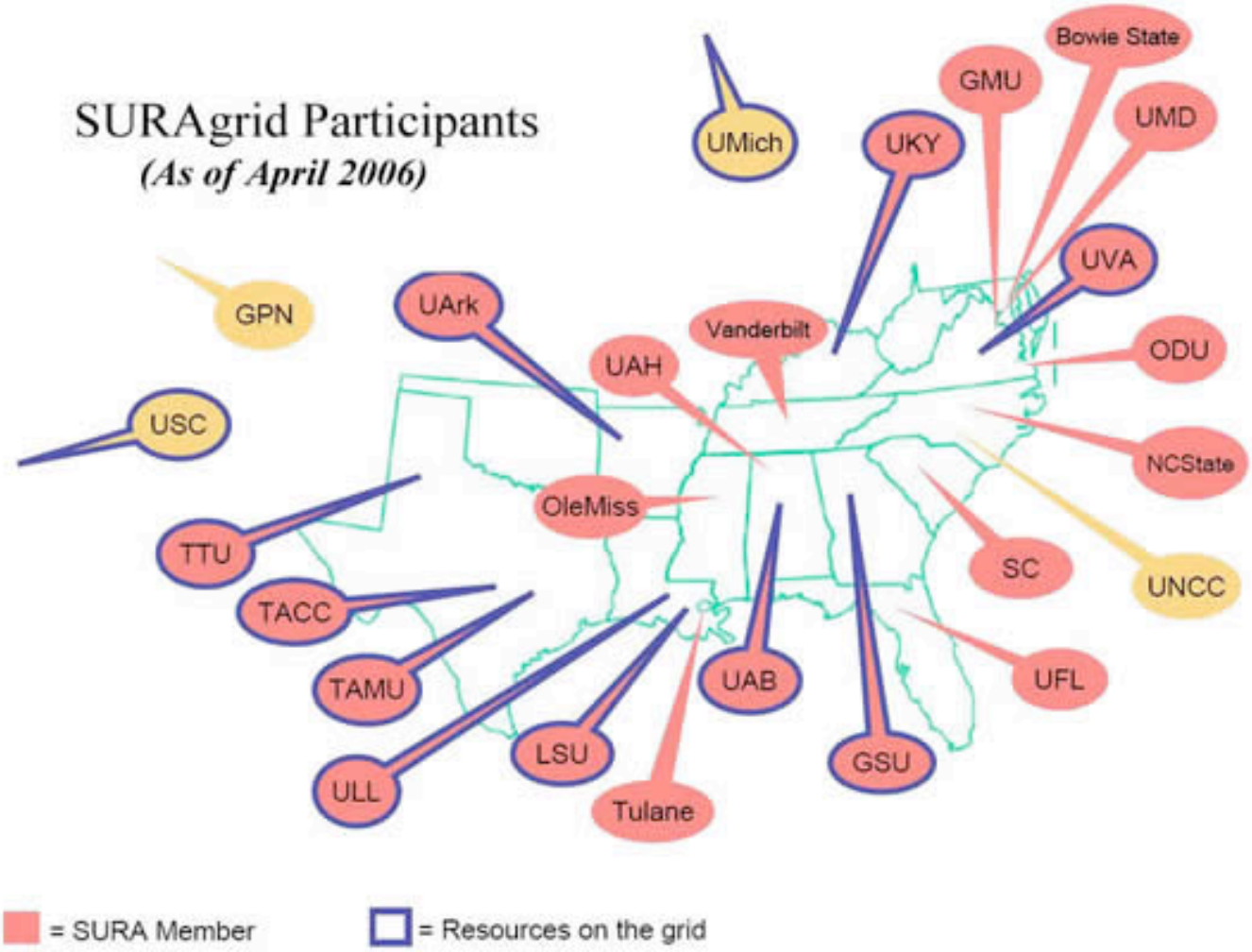
Do hurricanes ever come to Mexico?




Hurricane Wilma (cat-5)
NOAA-14 AVHRR 1 KM
October 19, 2005 @ 1428 UTC
CUBA
YUCATAN PENINSULA
COZUMEL ISLAND


Wind Forcing
NCEP
MM5
NCAR
or
Regional Archives
or
Synthetic Wind Ensembles
Ensemble winds from varied and distributed sources
Select region and time range
Transform and transport data
Wave and/or Surge Models
ADCIRC
ElCirc
CH3D
SWAN
WW3
Etc…
Ensemble of models run on distributed resources
Transport
Quality Control
Result Dissemination
Archival
Verification
Visualization
Catalog
Decision Support
Analysis, storage, cataloging, visualization

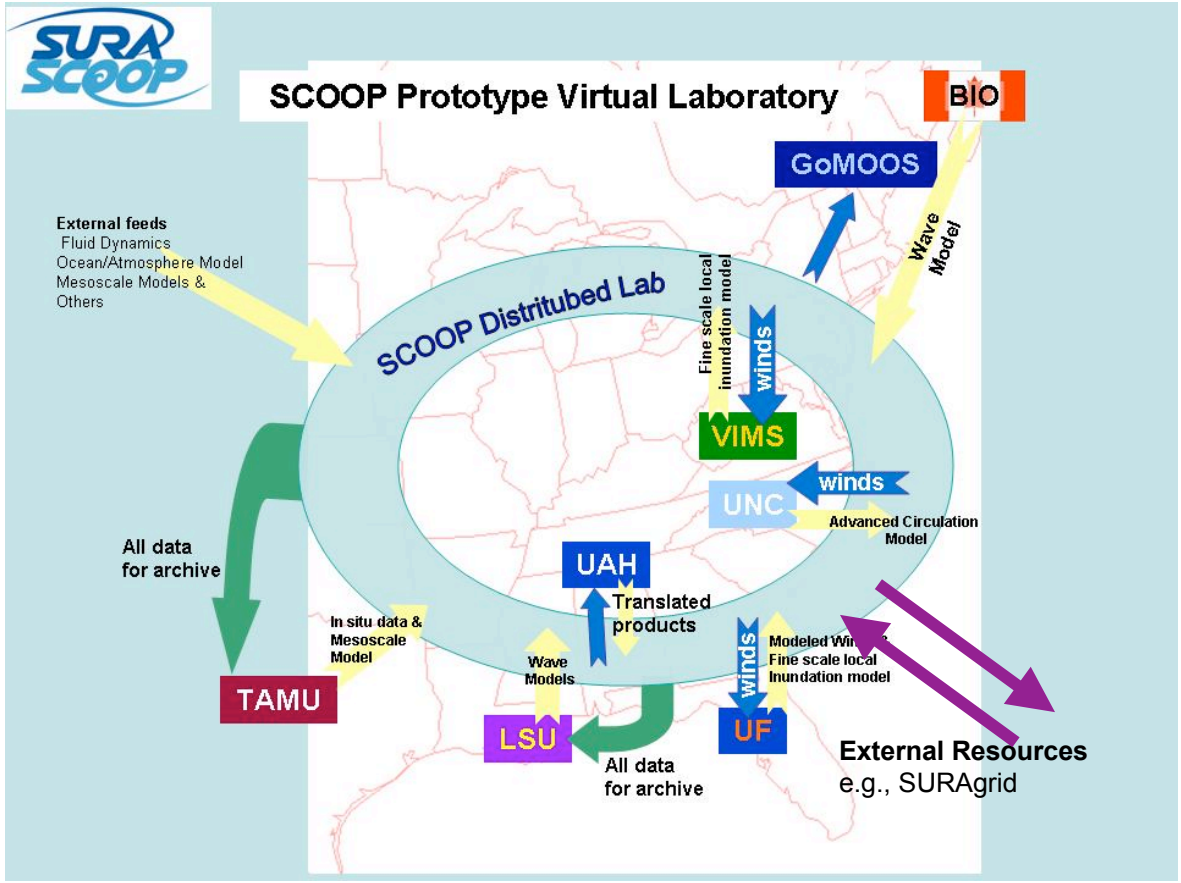
SURAgrid


SURAgrid Participants
(As of April 2006)
Bowie State
GMU
UMD
UMich
UKY
UVA
GPN
UArk
Vanderbilt
ODU
UAH
USC
NCState
OleMiss
TTU
SC
UNCC
TACC
UFL
TAMU
UAB
LSU
GSU
ULL
Tulane
= SURA Member
= Resources on the grid

SURA Coastal Ocean Observing and Prediction (SCOOP) Program

SCOOP Prototype Distributed Laboratory

Funded by ONR & NOAA



2005-07 SCOOP Implementation Team

- Bedford Institute of Oceanography
- Gulf of Maine Ocean Observing System
- Louisiana State University
- Texas A&M
- University of Alabama, Huntsville
- University of Florida
- University of North Carolina
- Virginia Institute of Marine Science
- Renaissance Computing Institute
- MCNC
- Southeastern Universities Research Association

Opportunities for Collaboration

- Scientific collaboration: SCOOP would benefit from collaboration with Mexican atmospheric and ocean scientists

- Societal benefit: hurricanes in the Gulf of Mexico cause grave and unpredictable harm to the people of both of our countries

For More Information

http://scoop.sura.org/

http://www.sura.org/SURAgrid