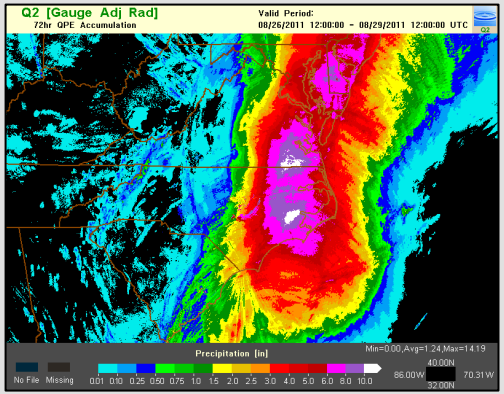
The Coastal and Inland FLooding Observation and Warning (CI-FLOW) Project

Kodi L. Nemunaitis (CIMMS/NSSL), J. J. Gourley (NSSL), Randall L. Kolar (University of Oklahoma)

Rainfall

- Past rainfall: NSSL's Multi-Radar Multi-Sensor System (MRMS) hourly gauge-adjusted estimates
- Future Rainfall: Weather Prediction Center's 6-hr precipitation forecasts (Day 1 & Day 2)



Streamflow

- Hybrid conceptual-physical distributed watershed model
- 128-member ensemble
- Runs every 6 hours
- 2-day spin-up, 5-day forecast

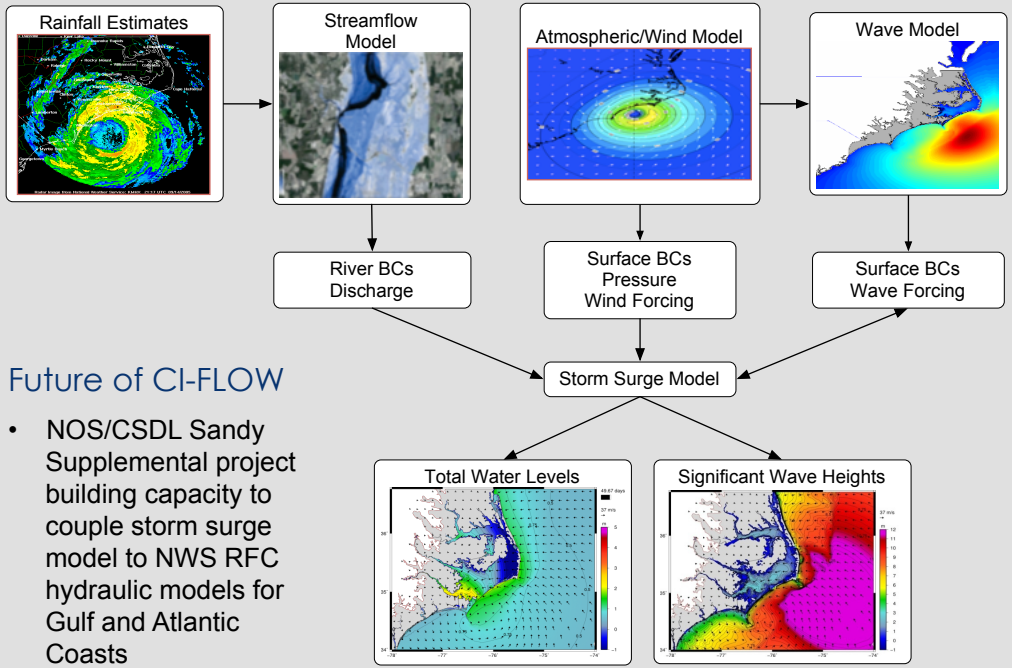
Storm Surge

- High-resolution coastal circulation model
- Takes into account storm's atmospheric pressure, size, forward speed, track, and maximum wind speeds
- Accounts for tides, wind-driven waves, and overland flow

The Coastal and Inland FLooding Observation and Warning (CI-FLOW) Project

Kodi L. Nemunaitis (CIMMS/NSSL), J. J. Gourley (NSSL), Randall L. Kolar (University of Oklahoma)

CI-FLOW Coupled Model System



Future of CI-FLOW

- NOS/CSDL Sandy Supplemental project building capacity to couple storm surge model to NWS RFC hydraulic models for Gulf and Atlantic Coasts

Hurricane Irene (2011)

- Peaked as Cat 3 hurricane; Cat 1 hurricane at landfall near Cape Lookout, NC on 27 August
- 15.74 in rainfall in Bayboro, NC; 8- to 11-ft storm surge within Pamlico Sound