“The CI-FLOW (Coastal and Inland Flooding Observation and Warning) Project”

Kodi Nemunaitis-Monroe

Coastal and Inland FLooding Observation and Warning (CI-FLOW) is a research project that captures the complex interaction between rainfall, river flows, waves, tides and storm surge, and how they will impact water levels in real-time for coastal North Carolina. CI-FLOW uses radar rainfall estimates adjusted with rain gauge data to force a hydrologic model that simulates freshwater flows for the Tar-Pamlico and Neuse Rivers. The hydrologic model output then serves as an upstream boundary condition for a coastal circulation and storm surge model that provides simulations of waves, tides and storm surge for the Pamlico Sound and the near-shore Atlantic Ocean. An overview of the CI-FLOW project is presented, as well as results from Hurricane Irene and ongoing research efforts.