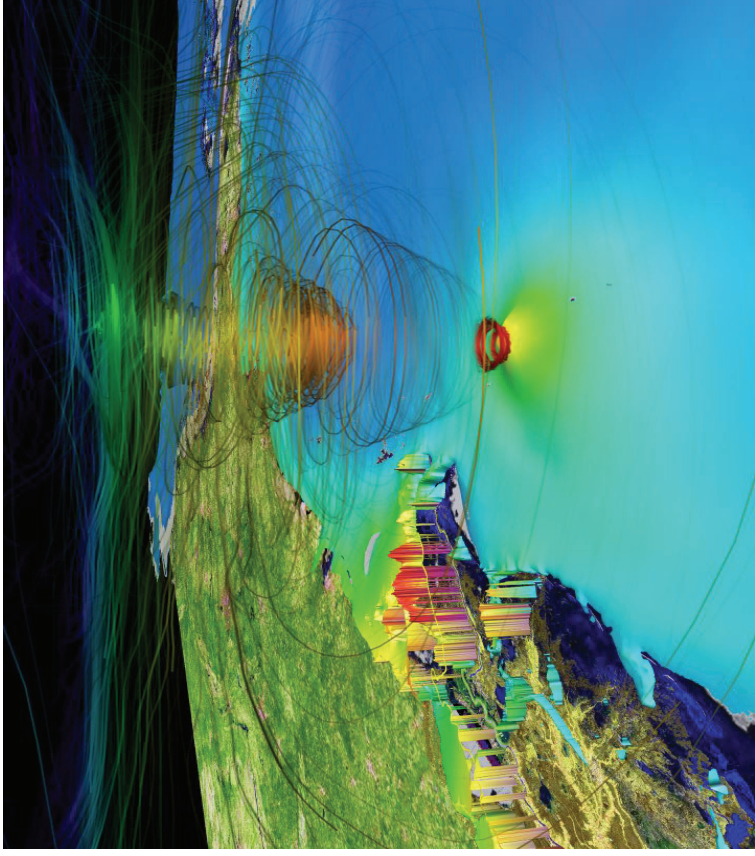


# Environmental Transport



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# Motivation

- **Economic:** Hurricane forecasts, wetland restoration, oil and gas, fisheries ...
- **Science:** Rich multiscale/multiphysics problems, integrating coastal science, computer science, ecology, ....
- **Scope of work:**
  - Dynamic coupling of CFD models (wave, surge, near-shore, ocean, ...)
  - Adaptive response to sensor and remote sensing data
  - Dynamic Data Driven Application Systems
  - Early Driver for CyberTools: dynamic resource allocation, portals, info services, ....



# Activities

- Support for Dynamic Data Driven Application Systems (Allen, Chen)
  - DDDAS Toolkit for Cactus Framework
  - Coupled coastal models
  
- Support for Decision making (Iyengar, Brenner)
  - New AI algorithms for ensemble modeling
  - Rule based, neural networks, case-based, etc
  - Implemented into toolkits



# People

- Gabrielle Allen (CS), Qin “Jim” Chen (Civil), Ram Iyengar (CS), Nat Brenner (CS)
- GA (Allen/Chen), GA (Iyengar, Brenner)
- Supporting Projects: SCOOP (NOAA/ONR), CoMI (DOD EPSCOR), DynaCode (NSF), UCOMS (DOE EPSCOR)
- CyberTools WPs:
  - WP1: On-demand scheduling and co-scheduling on LONI, data scheduling and management for forcing files
  - WP3: Real time, automated visualization of integrated data fields, model comparisons
  - WP4: CFD Toolkit and Cactus interfaces, SAGA, notification