Impact of Ocean Observations on Hurricane Irene and Hurricane Sandy Forecasts

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What We Learned

1. The coastal ocean can play a significant role in the intensity and track of hurricanes.
2. Unique ocean observations before, during, and after Hurricanes Irene and Sandy have led to improved atmospheric forecasts.
3. The same observations are currently being used to validate ocean models in simulation of coastal mixing during storms.

Background

- Rutgers University Coastal Ocean Observation Lab (RU-COOL) deployed underwater gliders in Hurricanes Irene (2011) and Sandy (2012)
- The data retrieved has informed researchers of the complex coastal mixing that occurs during intense storms and results in lower sea surface temperatures (SST) in the wake of the storms
- A new declouded regional satellite SST product developed at Rutgers captured post-Irene and post-Sandy cooling
- How can we use this new SST product to improve intensity overpredictions for Hurricane Irene, and intensity underpredictions as well as speed/timing forecasts for Hurricane Sandy?

Results & Discussion

Even coupled models (e.g. HWRF) overpredicted Irene

Sandy intensity predictions can be improved too...

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