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AOML-CariCOOS Hurricane Underwater Gliders

A NOAA cross Line Office and multi-institutional effort geared towards helping improve hurricane forecasts

Website: http://www.aoml.noaa.gov/phod/gliders
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Motivation:

- Ocean heat content has been linked to intensification of hurricanes
- Over past 50 years, very few ocean heat content observations were available in Caribbean and Tropical North Atlantic

Goal: Collect ocean observations to help improve Atlantic Hurricane forecasts

Strategy: Deploy of a network of underwater gliders (A) in the Caribbean Sea and Tropical North Atlantic Ocean to collect targeted sustained ocean observations

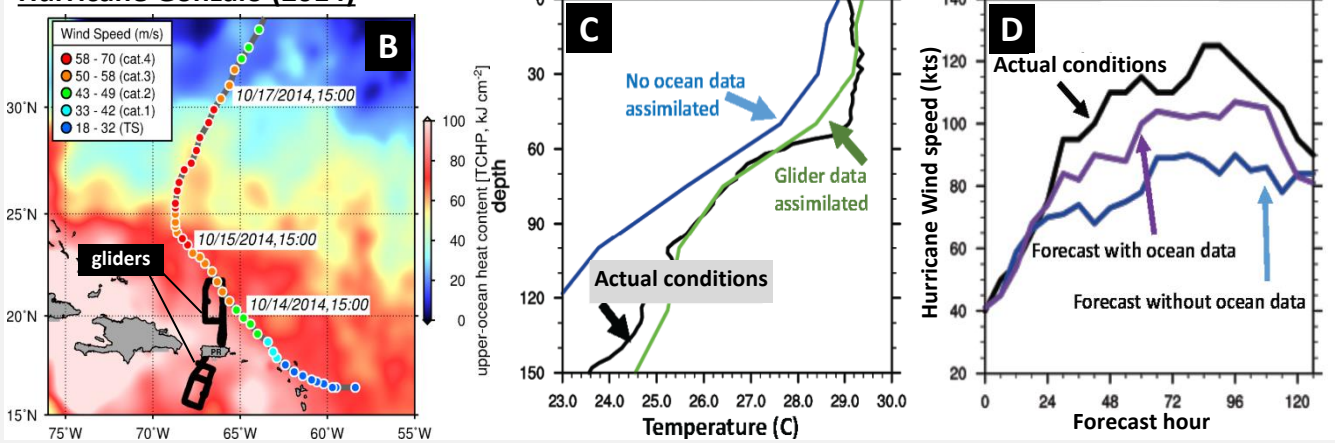
Key Accomplishments:

- Gliders currently collecting approximately 10K ocean observations per hurricane season, including during hurricane conditions (B)
- Glider data helps reduce errors of simulated ocean conditions used to initialize the ocean-atmosphere forecast models (C)
- Ocean observations helped to significantly reduce the error of Hurricane Gonzalo (2014) intensity forecast (D)

What is an Underwater Glider ?

- Underwater gliders are autonomous underwater vehicles that can be remotely operated
- Can be operated under hurricane wind conditions
- AOML conducts glider operations using four vehicles
- Each glider collects 10-20 profiles per day from the surface of the ocean to 1 km depth
- 4-5 months battery life spanning most of the Atlantic Hurricane Season
- Real-time transmission to data centers for use on operational ocean and hurricane forecasts

Hurricane Gonzalo (2014)



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