

## Enhancing the northeastern Tropical Atlantic Ocean Observing System

**Project Title: Improved forecasts of rainfall in the eastern United States on time-scales from synoptic to decadal (a joint AOML/PMEL proposal to NOAA/OGP)**

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**Objectives:** augment the ocean observing system in the northeastern tropical Atlantic Ocean with the primary objective of improving rainfall predictions for the Eastern United States on timescales ranging from synoptic to decadal.

**Plans:** the absence of PIRATA Atlas moorings in the northeastern Atlantic introduces a data gap in the main development region (MDR) where easterly waves translate from the African continent to the Atlantic and (sometimes) develop into closed-circulation tropical cyclones. Our plans are to deploy three Atlas buoys along 23°W (6, 13 & 20°N) to complement the existing equatorial mooring array and provide real-time data for NWP model initialization. Another mooring will be deployed at 20°N, 38°W to extend the PIRATA array on this longitude into the MDR. Satellite tracked surface drifters instrumented with sea-level pressure, SST and surface wind sensors will provide data in the gap between 23°W and 38°W in the MDR. A two-degree of latitude by two degree of longitude grid of 54 surface drifters will be deployed in this region during the hurricane season. Both the moorings and drifters will provide real-time data for use by the operational weather forecast community. Servicing the moorings and deploying the drifter and float arrays will simultaneously provide the opportunity to conduct periodic synoptic surveys of lower atmosphere and upper ocean conditions throughout the MDR. When combined with the existing in situ networks, data to study climatic signals will become available (i.e., we assume that the moorings will be in place for at least 5 years to explore/demonstrate their utility to the operational weather and climate research communities). Moored and drifting buoys will be deployed during a proposed 40-day hydrographic cruise in May-June 2006.

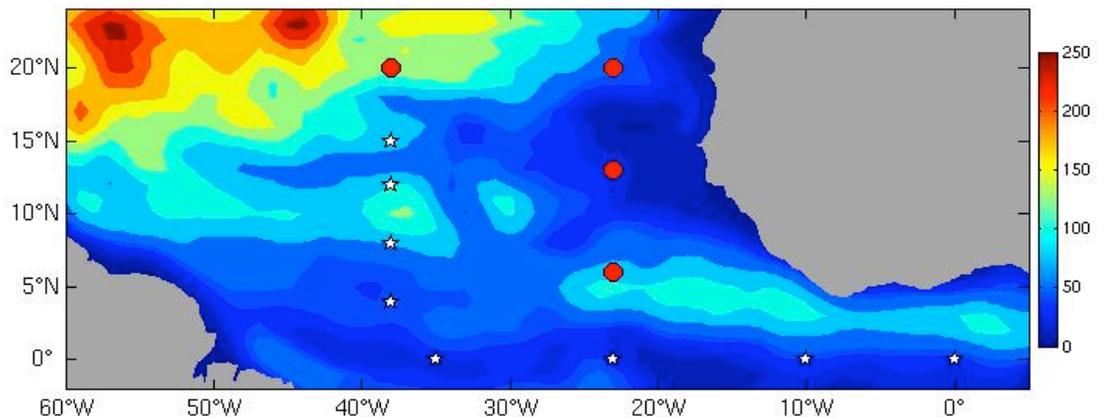


Fig.1: location of proposed Atlas moorings (red dots) and existing PIRATA Atlas buoys (white stars), superimposed on the density of surface drifter observations (drifter-days per square degree) for the period October 1990 through November 2004.