



## **The PIRATA Observing System in the Tropical Atlantic: Enhancements and perspectives**

Fabrice Hernandez (1), Moacyr Araujo (2), Bernard Boulès (3), Peter Brandt (4), Edmo Campos (5), Hervé Giordani (6), Rick Lumpkin (7), Michael J. McPhaden (8), Paulo Nobre (9), and Ramalingam Saravanan (10)  
(1) IRD/LEGOS/Mercator Océan, Ramonville St Agne, France (fabrice.hernandez@mercator-ocean.fr), (2) LOFEC/UFPE, Recife, Brazil, (3) IRD/LEGOS, IRD, Brest, France, (4) GEOMAR, Kiel, Germany, (5) IOUSP, Sao Paulo, Brazil, (6) Météo-France/CNRM, Toulouse, France, (7) NOAA/AOML, Miami, FL USA, (8) NOAA/PMEL, Seattle, MA USA, (9) INPE, Sao Jose Dos Campos, Brazil, (10) Texas A&M University, College Station, MD USA

PIRATA (Prediction and Research Moored Array in the Tropical Atlantic) is a multinational program established to improve our knowledge and understanding of ocean-atmosphere variability in the tropical Atlantic, a region that strongly influences the regional hydro-climates and, consequently, the economies of the regions bordering the Atlantic Ocean (e.g. West Africa, North-Eastern Brazil, the West Indies and the United States). PIRATA is motivated not only by fundamental scientific questions but also by societal needs for improved prediction of climatic variability and its impacts.

PIRATA, initiated in 1997, is based around an array of moored buoys providing meteorological and oceanographic measurements transmitted in real-time, disseminated via GTS and Global Data Servers. Then, through yearly mooring maintenance, recorded high frequency data are collected and calibrated. The dedicated cruises of yearly maintenance allow complementary acquisition of a large number of measurements along repeated ship track lines and also provide platforms for deployments of other components of the observing system. Several kinds of operations are carried out in collaboration with other international programs.

PIRATA provides invaluable data for numerous and varied applications, among which are analyses of climate variability on intraseasonal-to-decadal timescales, equatorial dynamics, mixed-layer temperature and salinity budgets, air-sea fluxes, data assimilation, and weather and climate forecasts.

PIRATA is now 20 years old, well established and recognized as the backbone of the tropical Atlantic sustained observing system. Several enhancements have been achieved during recent years, including progressive updating of mooring systems and sensors, also in collaborations with and as a contribution to other programs (such as EU PREFACE and AtlantOS). Recent major accomplishments in terms of air-sea exchanges and climate predictability will be highlighted in this presentation. Future perspectives for the network will also be discussed in the framework of a sustainable Atlantic Ocean Observing System.