



## **Planktonic foraminiferal assemblages: a stratigraphical tool to correlate cores in the northern slope of the Little Bahama Bank, Bahamas**

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The Bahama platforms are one of the major type areas of modern carbonate systems, with very limited terrigenous clastic input, except particles carried by wind and oceanic currents. High-resolution bathymetric and seismic data and thirty three cores have been collected during the oceanic cruise CARAMBAR (2010) along the slopes of the two largest Bahamian carbonate platforms: the Little and Great Bahama Banks (LBB and GBB, respectively). In this study, we focus on the export processes from the platform to the slope of the northern slope of the LBB, exposed to the prevalent winds (windward side), and sediment deposition related to Antilles current.

One of our objectives is to generate a high resolution biostratigraphic framework on the windward side of the Bahamian platform as a reference sequence to correlate with the other cores. The stratigraphic model is based on core CARKS-21 because of its long record (12 m) and because it penetrates entirely one of the major sedimentary body of the northwestern part of the LBB slope. We studied a longitudinal transect of three other marine cores located along the northern slope of the LBB: CARKS-24 in the head of a canyon, CARKS-30 in a distributary furrow, and CARKS-31 in a scoured depositional area.

The stratigraphical methods include faunal and floral analyses (planktonic foraminifera and coccoliths), radiometric dating, XRF analyses and isotopic stratigraphy. The sedimentary analyses include spectrophotocolometry and grain-size measurements, and identification of bioclasts. Stratigraphical correlations between cores are based on variations in the abundance of the planktonic foraminiferal assemblages.

A ratio based on specific planktonic foraminiferal species was determined in order to define long-term climatic trends (glacial vs interglacial period). Other planktonic foraminifera were used as stratigraphic indicators, such as the complex *Globorotalia menardii*, *Globorotalia tumida flexuosa*, *Globorotalia crassaformis* left-coiling, or *Globigerina ruber rosea*. The planktonic foraminiferal assemblages allowed to define the stratigraphy in order to understand the factors controlling the sedimentary processes (gravity, off-bank transport and/or current deposits) through time. Evidences of turbidite deposits such as erosion surface or fining-up trend in sediment deposits were observed only in the core collected in the canyon head during the last glacial period.