



Controls on Carbonate Preservation in Surface Sediments of the Florida Straits

J. Schwarz and R. Rendle-Bühring

Research Center Ocean Margins, University of Bremen, Bremen, Germany
(johanna.schwarz@uni-bremen.de / Phone: +49-(0)421-218-8662)

The water masses in the Florida Straits and Bahamas region are important sources for the Northern Atlantic surface ocean circulation. In this study we analyse carbonate preservation in surface sediments located above the chemical lysocline in the Florida Straits and Bahamas region, and discuss possible reasons for supralysoclineal dissolution. Calcite dissolution proxies such as the variation of the foraminiferal assemblage, Fragmentation Index, Benthic Foraminifera Index, and Resistance Index displayed a good preservation in both areas. The pteropod species *Limacina inflata* showed very good preservation in sediments of inter-platform channels from the Great Bahama Bank (Providence Channel, Exuma Sound) above the aragonite lysocline. Supralysoclineal aragonite dissolution, however, was observed at two water depth levels (800 - 1000 m and below 1500 m) in the Florida Straits. Our observations suggest that the supralysoclineal dissolution in the Florida Straits is due to the degradation of organic material. The presence of Antarctic Intermediate Water (AAIW) may be a contributing factor for the significant aragonite dissolution in 800 – 1000 m. The comparison of modern preservation patterns of the surface sediments with hydrographical measurements shows that the *Limacina inflata* Dissolution Index (LDX) might be an adequate proxy to reconstruct paleo-water mass conditions in an area which is highly saturated with respect to calcium carbonate.