

**Ground-truthing the boron isotope-paleo  $pH$  proxy in planktonic foraminifera shells:  
Investigating the effects of temperature and boron concentration**

**by Bärbel Hönisch**

Adjunct Associate Research Scientist at LDEO  
Geochemistry Building, Office # 71  
extension 8828  
email: hoenisch@ldeo.columbia.edu

**Abstract**

The boron isotopic composition ( $\delta^{11}B$ ) of planktonic foraminifera shells is one of the most promising proxies for reconstructing past changes in seawater carbonate chemistry. Seawater- $pH$  is one parameter that will eventually help us to better understand past changes in atmospheric  $pCO_2$  and associated climate conditions. In order to benefit from the full potential of this proxy, it is essential to rule out or quantify the effect parameters that might have a secondary control on  $\delta^{11}B$ . Here we propose culture experiments with the living planktonic foraminifer *Orbulina universa* to investigate potential side effects of temperature and boron concentration.