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Setting-up foraminiferal element/Ca ratio method for paleoceanographic studies

Jimin Yu (jiminyu@ldeo.columbia.edu) and
Wally Broecker (broecker@ldeo.columbia.edu)

Abstract

Minor and trace elements in foraminiferal carbonates serve as valuable proxies for paleoceanographic studies, but a method to measure multiple foraminiferal ratios has not been set up at Lamont. We request \$8,000 to set up an ICP-MS method to determine 10 element/Ca ratios (Li/Ca, B/Ca, Mg/Ca, Al/Ca, Mn/Ca, Zn/Ca, Sr/Ca, Cd/Ca, Ba/Ca, and U/Ca) simultaneously with precisions within ~3% (RSD) for foraminiferal samples as small as 60 μg . We aim to use the method to measure benthic B/Ca for deep ocean carbonate ion reconstructions as well as other projects. The method will also benefit other researchers at Lamont using foraminiferal element/Ca ratios for paleoceanographic studies.