



Individual specimen stable isotope analysis of planktonic foraminifera

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The basis of palaeoceanographic reconstructions, either as a temperature or stratigraphic tool, is the isotopic analysis (^{18}O ; ^{13}C) of a group of specimens of Planktonic foraminifera collected from sediments. Repetition of such analysis is expected to reduce the variability seen compared to the variability one obtains from the analysis of individual specimens, the pooling of a large number of specimens is expected to decrease this variability with the reciprocal value of the square root of the number of specimens within a single analysis. In other words, noise is reduced but the inherent variability is lost.

The isotopic information stored within a single foraminifer provides not only insight into the short term variability of the ocean but also sediment dynamics where individuals collected together in a single sedimentary sample may have calcified in different seasons (or years), at different depths, or even in different water masses. We present an overview of the individual isotope analysis conducted on a number of plankton tows, sediment traps and core tops.