Geophysical Research Abstracts
Vol. 15, EGU2013-10592, 2013
EGU General Assembly 2013

Comparison of bomb-pulse U-236 and C-14 as oceanic tracer

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Since uranium is known to behave conservatively in ocean waters, U-236 has great potential in application as tracer of ocean currents. U-236 (t1/2=23.4Ma) was introduced into the oceans by atmospheric nuclear weapon testing with amounts estimates ranging from 700kg to 1500kg. With its half-live longer than its already significant residence time in the ocean ($\sim$0.5Ma) it is essentially a stable isotope tracer for this purpose.
However, even the elevated ratios of global stratospheric fall-out are beyond the capabilities of ICPMS and TIMS methods. Using the exceptional sensitivity and ultra-low background for U-236 of the Vienna Environmental Research Accelerator's Accelerator Mass Spectrometry system, we have measured, and recently published the first year-by-year record of the bomb-pulse of U-236 in the marine environment.[1]
In contrast to C-14, which has much wider application as ocean tracer, uranium does not have the added complication of atmosphere-ocean exchange when input into the ocean is considered. A comparison of the evolution of the bomb-pulse C-14 with bomb-pulse U-236 in the ocean could provide additional input for modeling.
Here we present a comparison of our year-by-year record of U-236/U-238 with the yearly resolved C-14 in the same core covering years 1944 to 2006. We discuss the results in the context of existing marine C-14 of the region and the marine reservoir effect.