Uranium systematics in North Pacific deep sea red clays

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Abstract:
The validity of uranium-series dating on fossil corals is limited by our knowledge on the uranium isotope budget in the global ocean, which is crucial for past sea level reconstruction. Two major sources, which have been identified to produce the positive anomaly of ($^{234}U/^{238}U$) activity ratio in seawater, with respect to the secular equilibrium, are ^{234}U fluxes from rivers and marine sediments due to the α-recoil effect. However, it remains a challenge to quantify their individual contributions. Here, we propose to perform high-precision uranium isotope analysis on coupled sediment and pore water samples from ODP sites 885/886. We intend to characterize both elemental and isotopic behaviors in these deep sea red clay cores. The results will shed light on the contribution of marine sediments to the oceanic uranium isotope budget.