Global Biogeochemical Cycles

RESEARCH ARTICLE
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Key Points:
- δ238U values were measured in iron-rich, anoxic (ferruginous) modern natural environments, and Paleozoic shales deposited under ferruginous conditions
- δ238U fractionations in these environments are highly variable and generally indistinguishable from isotopic fractionations associated with oxic settings
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Supporting Information:
- Supporting Information S1

Uranium Isotope Fractionation in Non-sulfidic Anoxic Settings and the Global Uranium Isotope Mass Balance

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Abstract Uranium isotopes ($^{238}U/^{235}U$) have been used widely over the last decade as a global proxy for marine redox conditions. The largest isotopic fractionations in the system occur during U reduction, removal, and burial. Applying this basic framework, global U isotope mass balance models have been used