

Review of:

B.A. Bergquist, J. D Blum. Mass-Dependent and -Independent Fractionation of Hg Isotopes by Photoreduction in Aquatic Systems. *Science* **318**, 417(2007).

Primary question

Investigation of Hg MDF and MIF and application to understanding global Hg cycle (reservoir sizes, fluxes, etc.).

Why is this important in the larger perspective?

Hg has complex biogeochemistry; varying levels of toxicity and mobility.

Strength

Comparison of controlled experiments and natural systems

Weakness

Detection limits—experiments done at higher [Hg] than natural systems, so relationships measured more qualitative than quantitative

Novel interpretation

Proponent magnetic isotope effect

Appl'n to bioaccumulation studies and fluxes btwn reservoirs

How has this changed/advanced our understanding of the issue?

Trigger for more study—since examined fxn'n btwn snow-atm, wavelengths light in photoreduction

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12.491 Non-conventional Light Stable Isotope Geochemistry
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