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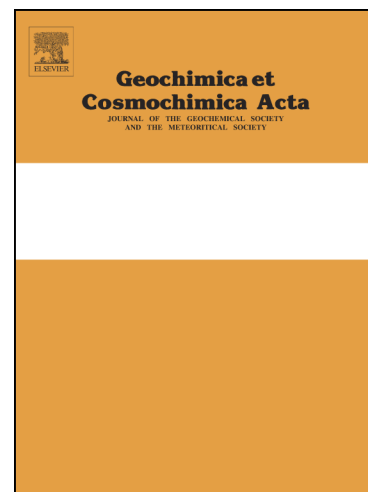
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Iron cycling and stable Fe isotope fractionation in Antarctic shelf sediments, King George Island

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Abstract

Iron (Fe) fluxes from reducing sediments and subglacial environments are potential sources of bioavailable Fe into the Southern Ocean. Stable Fe isotopes ($\delta^{56}\text{Fe}$) are considered a proxy for Fe sources and reaction pathways, but respective data are scarce and Fe cycling in complex natural environments is not understood sufficiently to constrain respective $\delta^{56}\text{Fe}$ “endmembers” for different types of sediments, environmental conditions, and biogeochemical processes.

We present $\delta^{56}\text{Fe}$ data from pore waters and sequentially extracted sedimentary Fe phases of two contrasting sites in Potter Cove (King George Island, Antarctic Peninsula), a bay that is affected by fast glacier retreat. Sediments close to the glacier front contain more easily reducible

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