

Accepted Manuscript

Opposing authigenic controls on the isotopic signature of dissolved iron in hydrothermal plumes

A.J. M. Lough, J.K. Klar, W.B. Homoky, S.A. Comer-Warner, J.A. Milton, D.P. Connelly, R.H. James, R.A. Mills

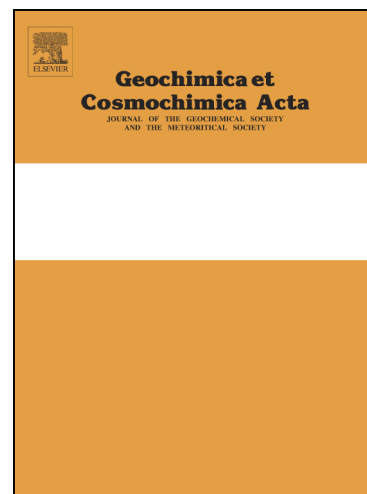
PII: S0016-7037(16)30731-1
DOI: <http://dx.doi.org/10.1016/j.gca.2016.12.022>
Reference: GCA 10074

To appear in: *Geochimica et Cosmochimica Acta*

Received Date: 25 July 2016
Revised Date: 2 December 2016
Accepted Date: 13 December 2016

Please cite this article as: Lough, A.J.M., Klar, J.K., Homoky, W.B., Comer-Warner, S.A., Milton, J.A., Connelly, D.P., James, R.H., Mills, R.A., Opposing authigenic controls on the isotopic signature of dissolved iron in hydrothermal plumes, *Geochimica et Cosmochimica Acta* (2017), doi: <http://dx.doi.org/10.1016/j.gca.2016.12.022>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Opposing authigenic controls on the isotopic signature of dissolved iron in hydrothermal plumes

Lough, A. J. M.^{a,b*}, Klar, J. K.^{b¹}, Homoky, W. B.^c, Comer-Warner, S.A.^{a,b[†]}, Milton, J.A.^b, Connelly, D. P.^a, James, R. H.^b, Mills, R. A.^b

^a *National Oceanography Centre, European Way, Southampton, SO14 3ZH, UK.*

^b *Ocean and Earth Science, National Oceanography Centre Southampton, University of Southampton, Southampton, SO14 3ZH, UK.*

^c *Department of Earth Sciences, University of Oxford, South Parks Road, Oxford, OX1 3AN, UK.*

*Corresponding author: A.J.M.Lough@soton.ac.uk. Current address: National Oceanography Centre, University of Southampton Waterfront Campus, European Way, Southampton, SO14 3ZH, UK. Tel: 023 8059 9219 ext 29219

¹ *Now at: LEGOS, Université de Toulouse, CNRS, CNES, IRD, UPS, 14 avenue Edouard Belin, 31400 Toulouse, France*

[†] *Now at: Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK.*

ABSTRACT

Iron is a scarce but essential micronutrient in the oceans that limits primary productivity in many regions of the surface ocean. The mechanisms and rates of Fe supply to the ocean interior are still poorly understood and quantified. Iron isotope ratios of different Fe pools can potentially be used to trace sources and sinks of the global Fe biogeochemical cycle if these boundary fluxes have distinct signatures. Seafloor hydrothermal vents emit metal rich fluids from mid-ocean ridges into the deep ocean. Iron isotope ratios have the potential to be used to trace the input of hydrothermal dissolved iron to the oceans if the local controls on the fractionation of Fe isotopes during

Download English Version:

<https://daneshyari.com/en/article/5783492>

Download Persian Version:

<https://daneshyari.com/article/5783492>

[Daneshyari.com](https://daneshyari.com)