

Accepted Manuscript

Zn-Sr isotope records of the Ediacaran Doushantuo Formation in South China: diagenesis assessment and implications

Yiwen Lv, Sheng-Ao Liu, Huaichun Wu, Simon V. Hohl, Shouming Chen, Shuguang Li

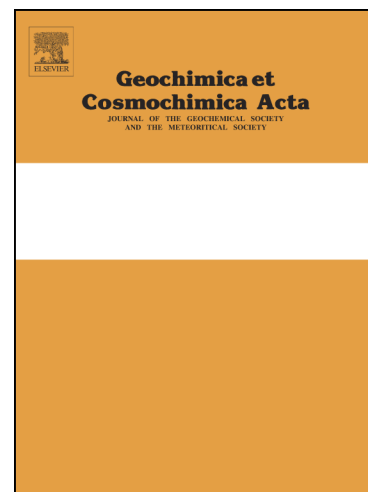
PII: S0016-7037(18)30431-9
DOI: <https://doi.org/10.1016/j.gca.2018.08.003>
Reference: GCA 10876

To appear in: *Geochimica et Cosmochimica Acta*

Received Date: 3 July 2017
Revised Date: 1 August 2018
Accepted Date: 2 August 2018

Please cite this article as: Lv, Y., Liu, S-A., Wu, H., Hohl, S.V., Chen, S., Li, S., Zn-Sr isotope records of the Ediacaran Doushantuo Formation in South China: diagenesis assessment and implications, *Geochimica et Cosmochimica Acta* (2018), doi: <https://doi.org/10.1016/j.gca.2018.08.003>

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.



Zn-Sr isotope records of the Ediacaran Doushantuo Formation in South China: diagenesis assessment and implications

Yiwen Lv^a, Sheng-Ao Liu^{a,*}, Huaichun Wu^b, Simon V. Hohl^c, Shouming Chen^d,
Shuguang Li^a

^aState Key Laboratory of Geological Processes and Mineral Resources, and School of Earth Science and Resources, China University of Geosciences, Beijing 100083, China

^bSchool of Marine Sciences, China University of Geosciences, Beijing 100083, China

^cState Key Laboratory for Mineral Deposits Research, Department of Earth Sciences, Nanjing University, Nanjing 210023, China.

^dInstitute of Geology, Chinese Academy of Geological Science, Beijing, China

*Corresponding to S.-A. Liu (Email: lsa@cugb.edu.cn). Revised submission to GCA

ABSTRACT

Recent studies show that zinc isotopes could provide valuable clues to environmental change and biogeochemical cycle of the past oceans. This study reports a modified procedure for leaching the carbonate fractions in sedimentary rocks, a thorough evaluation of diagenetic effects, and systematic variations of Zn and Sr isotope ratios in lower part of the Ediacaran stratigraphic unit deposited in the aftermath of the Marinoan glaciation in South China. The influence of post-depositional diagenesis on Zn isotope compositions of the studied samples is assessed by comparing $\delta^{66}\text{Zn}$ to other geochemical indexes ($^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{13}\text{C}$, $\delta^{18}\text{O}$ and Mn/Sr ratios). In the five studied cap carbonate sections (Member I of the Doushantuo Formation), dolostones from four sections have $\delta^{66}\text{Zn}$ values positively correlated with $\delta^{18}\text{O}$ values and negatively correlated with $^{87}\text{Sr}/^{86}\text{Sr}$ ratios (0.7081 to 0.7204). These correlations suggest that these cap dolostone samples have been modified by post-depositional diagenesis. The light $\delta^{66}\text{Zn}$ value (-0.02‰) suggests that initial Zn isotope ratios of cap dolostones could have been reset by hydrothermal fluids with relatively high Zn concentration and low $\delta^{66}\text{Zn}$ values.

Download English Version:

<https://daneshyari.com/en/article/8910579>

Download Persian Version:

<https://daneshyari.com/article/8910579>

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