

Accepted Manuscript

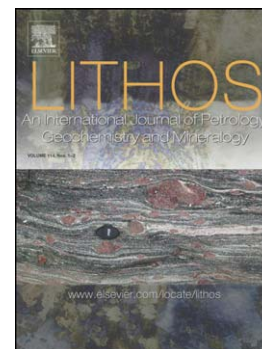
Magmatic recharge buffers the isotopic compositions against crustal contamination in formation of continental flood basalts

Xun Yu, Li-Hui Chen, Gang Zeng

PII: S0024-4937(17)30134-2
DOI: doi:[10.1016/j.lithos.2017.03.027](https://doi.org/10.1016/j.lithos.2017.03.027)
Reference: LITHOS 4277

To appear in: *LITHOS*

Received date: 2 August 2016
Accepted date: 27 March 2017



Please cite this article as: Yu, Xun, Chen, Li-Hui, Zeng, Gang, Magmatic recharge buffers the isotopic compositions against crustal contamination in formation of continental flood basalts, *LITHOS* (2017), doi:[10.1016/j.lithos.2017.03.027](https://doi.org/10.1016/j.lithos.2017.03.027)

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.

Magmatic recharge buffers the isotopic compositions against crustal contamination in formation of continental flood basalts

Xun Yu, Li-Hui Chen*, Gang Zeng

State Key Laboratory for Mineral Deposits Research, School of Earth Sciences and Engineering, Nanjing University, Nanjing 210023, China

*Corresponding author: chenlh@nju.edu.cn

ABSTRACT

Isotopic compositions of continental flood basalts are essential to understand their genesis and to constrain the character of their mantle sources. Because of potential crustal contamination, it needs to be evaluated if and to which degree these basalts record original isotopic signals of their mantle sources and/or crustal signatures. This study examines the Sr, Nd, Hf, and Pb isotopic compositions of the late Cenozoic Xinchang-Shengzhou (XS) flood basalts, a small-scale continental flood basalt field in eastern China. The basalts show positive correlations between $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$, and negative correlations between $^{143}\text{Nd}/^{144}\text{Nd}$ and $^{176}\text{Hf}/^{177}\text{Hf}$, which deviate from compositional arrays of crustal contamination and instead highlight variations in magmatic recharge intensity and mantle source compositions. The lava samples formed by high-volume magmatic recharge recorded signals of recycled sediments in the mantle source, which are characterized by moderate Ba/Th (91.9–106.5), excess $^{208}\text{Pb}/^{204}\text{Pb}$ relative to $^{206}\text{Pb}/^{204}\text{Pb}$, and excess $^{176}\text{Hf}/^{177}\text{Hf}$ relative to $^{143}\text{Nd}/^{144}\text{Nd}$. Thus, we propose that magmatic recharge buffers

Download English Version:

<https://daneshyari.com/en/article/5784025>

Download Persian Version:

<https://daneshyari.com/article/5784025>

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