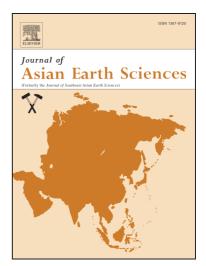
Accepted Manuscript

Geochemistry of the dissolved loads of the Liao River basin in northeast China under anthropogenic pressure: Chemical weathering and controlling factors

Hu Ding, Cong-Qiang Liu, Zhi-Qi Zhao, Si-Liang Li, Yun-Chao Lang, Xiao-Dong Li, Jian Hu, Bao-Jian Liu

| PII: | S1367-9120(16)30239-5 |
|----------------|--|
| DOI: | http://dx.doi.org/10.1016/j.jseaes.2016.07.026 |
| Reference: | JAES 2771 |
| To appear in: | Journal of Asian Earth Sciences |
| Received Date: | 1 September 2015 |
| Revised Date: | 11 July 2016 |
| Accepted Date: | 23 July 2016 |



Please cite this article as: Ding, H., Liu, C-Q., Zhao, Z-Q., Li, S-L., Lang, Y-C., Li, X-D., Hu, J., Liu, B-J., Geochemistry of the dissolved loads of the Liao River basin in northeast China under anthropogenic pressure: Chemical weathering and controlling factors, *Journal of Asian Earth Sciences* (2016), doi: http://dx.doi.org/10.1016/j.jseaes.2016.07.026

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.

ACCEPTED MANUSCRIPT

Geochemistry of the dissolved loads of the Liao River basin in northeast China under anthropogenic pressure: Chemical weathering and controlling factors

Hu Ding, Cong-Qiang Liu^{*}, Zhi-Qi Zhao, Si-Liang Li, Yun-Chao Lang, Xiao-Dong

Li, Jian Hu, Bao-Jian Liu State Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang 550002, China

Abstract

This study focuses on the chemical and Sr isotopic compositions of the dissolved load of the rivers in the Liao River basin, which is one of the principal river systems in northeast China. Water samples were collected from both the tributaries and the main channel of the Liao River, Daling River and Hun-Tai River. Chemical and isotopic analyses indicated that four major reservoirs (carbonates (+gypsum), silicates, evaporites and anthropogenic inputs) contribute to the total dissolved solutes. Other than carbonate (+gypsum) weathering, anthropogenic inputs provide the majority of the solutes in the river water. The estimated chemical weathering rates (as TDS) of silicate, carbonate (+gypsum) and evaporites are 0.28, 3.12 and 0.75 t/km²/yr for the main stream of the Liao River and 7.01, 25.0 and 2.80 t/km²/yr for the Daliao River, respectively. The associated CO₂ consumption rates by silicate weathering and carbonate (+gypsum) weathering are 10.1 and 9.94 ×10³ mol/km²/yr in the main stream of the Liao River and 69.0 and 80.4 ×10³ mol/km²/yr in the Hun-Tai River.

^{*} Corresponding author. Tel.: +86 851 5891164; fax: +86 851 5891609

E-mail address: liucongqiang@vip.skleg.cn

Postal address: Institute of Geochemistry, Chinese Academy of Sciences, 46 Guanshui Road, Guiyang 550002, China

Download English Version:

https://daneshyari.com/en/article/5786079

Download Persian Version:

https://daneshyari.com/article/5786079

Daneshyari.com