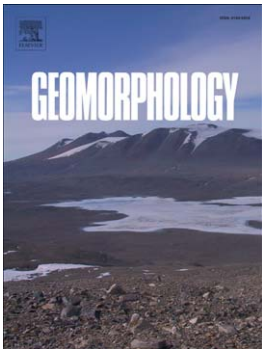

Connection of the proto-Yangtze River to the East China Sea traced by sediment magnetic properties

Xianbin Liu, Jing Chen, Barbara A. Maher, Baocheng Zhao, Wei Yue, Qianli Sun, Zhongyuan Chen

PII: S0169-555X(16)31113-8
DOI: doi:10.1016/j.geomorph.2017.11.023
Reference: GEOMOR 6238

To appear in: *Geomorphology*

Received date: 23 November 2016
Revised date: 27 November 2017
Accepted date: 27 November 2017

Please cite this article as: Liu, Xianbin, Chen, Jing, Maher, Barbara A., Zhao, Baocheng, Yue, Wei, Sun, Qianli, Chen, Zhongyuan, Connection of the proto-Yangtze River to the East China Sea traced by sediment magnetic properties, *Geomorphology* (2017), doi:10.1016/j.geomorph.2017.11.023

Connection of the proto-Yangtze River to the East China Sea traced by sediment magnetic properties

Xianbin Liu[1)], Jing Chen[1) *], Barbara A. Maher[2)], Baocheng Zhao[3)], Wei Yue[1)], Qianli Sun[1)], Zhongyuan Chen[1)]

1) State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai 200062, China
2) Centre for Environmental Magnetism & Palaeomagnetism, Lancaster Environment Centre, University of Lancaster, LA1 4YQ, UK
3) Shanghai Institute of Geological Survey, Shanghai 200072, China

*Corresponding author: jchen@geo.ecnu.edu.cn

State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai 200062, China

Phone No.: 86-21-62232706

Abstract

The evolution of the Yangtze River, and specifically how and when it connected to the East China Sea, has been hotly debated with regard to possible linkages with the so-called 'Cenozoic Topographic Reversal' (tectonic tilting of continental east China in the Cenozoic) and particularly the relationship to the uplift history of the Tibetan Plateau. Resolving this key question would shed light on the development of large Asian rivers and related changes in landforms and monsoon climate during this interval. Here, we use the magnetic properties of both Plio-Quaternary sediments in the Yangtze delta and of surficial river sediments to identify a key mid-late Quaternary switch in sediment source-sink relationships. Our results reveal a fundamental shift in sediment