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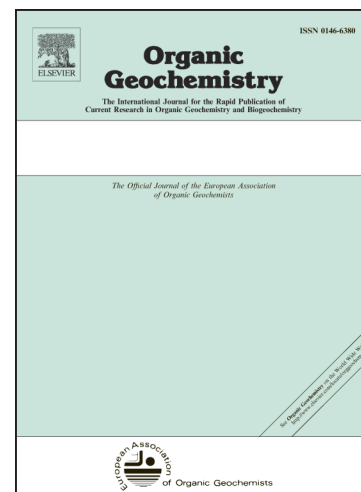
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Aliphatic hydrocarbon biomarkers as indicators of organic matter source and composition in surface sediments from shallow lakes along the lower Yangtze River, Eastern China

Yongdong Zhang^{a*}, Yaling Su^a, Zhengwen Liu^{a,b*}, Lingyang Kong^a, Jinlei Yu^a, Miao Jin^a

^a State Key Laboratory of Lake Science and Environment, Nanjing Institute of Geography & Limnology, Chinese Academy of Sciences, Nanjing 210008, China

^b Department of Ecology and Research Center of Hydrobiology, Jinan University, Guangzhou 510632, China

*Corresponding author: Dr. Zhang Yongdong and Liu Zhengwen, E-mail: ydzhang@niglas.ac.cn; zliu@niglas.ac.cn

Abstract

Aliphatic hydrocarbon biomarkers from the surface sediments of lakes along the lower reaches of the Yangtze River (Eastern China) were analyzed in order to determine the origin and composition of organic matter (OM) in the sediment, which is necessary to understand how anthropogenic environmental change in the region is impacting on OM dynamics and carbon cycles. The results indicate that OM in lake sediments is derived from biogenic sources including phytoplankton, aquatic macrophytes, bacteria and terrestrial plants, and abiotic sources of petroleum hydrocarbon contamination. The significance of each source varies greatly between lakes. Inputs of autochthonous OM to sediments were closely dependent on nutrient levels and the organisms present in the lake water column. Cyanobacterial OM input, signified by the distribution of short-chain *n*-alkanes, was most abundant in sediments from the most severely polluted lake, West Lake Chaohu. OM derived from diatoms, indicated by C25 highly branched isoprenoids (HBIs), was relatively abundant in sediments from lakes Gucheng and Shijiu, the two studied lakes with the lowest nutrient levels. Growth of macrophytes in lakes Gucheng, Shijiu, Gehu and

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