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Particulate organic matter in the northwest East China Sea—implications from amino acids enantiomers

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The north west East China Sea along the main land coast of China is an important region under the strong influence of the Changjiang (Yangtze) River. It is a main pathway for the particulate matter of the Changjiang travelling to the open ocean. An investigation was carried out in this interesting region north in May, 2007. Besides common parameters such as pH, nutrients, organic carbon and particulate nitrogen (PN), particulate amino acids enantiomers (PAA) were analyzed for all the surface samples and two typical sections.

As influenced by strong terrestrial input, nutrients (e.g. dissolved inorganic nitrogen) in the surface increased much when closing the river mouth. Total suspended matter (TSM) concentrated in region close to the river mouth and around Zhoushan Archipelago, which then quickly decreased seawards. PN and PAA ranged from 0.6-7.8 μmol/L and 0.46-5.53 μmol/L, respectively. Elevated PAA concentration can be found along TSM front area. Asx, Glx and Gly were the main amino acids contributors. D-enantiomers accounts for 2%-7.6% of total PAA, indicating the activities of microbial activities. Relatively higher Degradation index (DI) suggests that particulate matter in this region is fresh, relative to other regions in the world.