



Riverine discharge and environmental fate of emerging organic contaminants in the coastal seas

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Aquatic ecosystems are under permanent pressure by man-made pollution that enters into coastal and marine environments via river discharge, atmospheric transport and deposition as well as diffusion input pathways. The coastal abiotic marine environment can be regarded as the starting point for the accumulation and magnification of toxic chemicals in the marine food chain. This is especially the case for the long-living emerging organic contaminants (EOCs). Due to the importance of coastal environments as human food reservoirs, EOCs consequently threaten the human- and ecosystem health, including socioeconomical consequences. EOCs can be transported from large rivers to coastal environments and towards the open oceans resulting in a long-term pollution and long-term effects on the global marine environment.

This work focused on studies of the occurrence and distribution of emerging organic pollutants such as organophosphate esters (OPE) and phthalate esters plasticizers (PEs) in surface waters of the large rivers and seawater in the marine environment. Initial studies have been carried out in the North Sea (German Bight), Bohai and Yellow seas as well as several large rivers selected, e.g. Elbe, Rhine in Germany and Xiaoqing River in China. Emerging organic pollutants have been determined in both dissolved phase and suspended matters of water samples. This work will provide new data to improve understanding of the riverine discharge and environmental fate of emerging contaminants in the coastal seas.