and 1.5 kg/m^2/hr (northward), respectively. It was found that SS_{LH} was 3.2 times higher than SS_{LV}. The maximum SS net flux was estimated to be about 9.8 (eastward) and 1.1 kg/m^2/hr (northward) at bottom layer (6 m). As result of, the depth averaged values of SS_{LH} and SS_{LV} during spring tide were approximately 6 times higher than those during neap tide. In order to estimate SS net flux of two tidal periods, and topographical changes in the southern part of Jinudo from the monitoring, both SS_{LH} and SS_{LV} overall presented the maximum at bottom layer. Therefore, we considered that topographical changes were arisen by resuspension due to the bottom friction sediment by strong flow in the flood tide. The SS net fluxes in the Nakdong River estuary transport to the NE during spring and neap tides, this is well corresponding to the direction of residual currents. Future studies will identify changes of seasonal deposition and estimate quantitative behaviors of resuspended sediment. Besides, this field survey will be conducted at the other stations in summer.

Long term variation and major impact factors of nitrogen and phosphorus transportation by the Yellow River, China

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Monitored data of nitrogen and phosphorus of latest 40 years（for nitrogen）or 20 years（for phosphorus）in the lower reaches of the Yellow River were collected. Meanwhile, corresponding population, nitrogen and phosphorus fertilizer application data, and industrial wastewater data of the Yellow River basin were also collected. Statistical analysis was used to exam the relationship of these social economic development data and the water quality, in order to explore links between the population growth, fertilizer application, wastewater discharge and the variation of nitrogen and phosphorus transportation. The results indicated that nitrogen transportation in the Yellow River had an increasing trend during the last 40 years, however, it declined considerably in the later 1990s due to the desiccation of the Yellow River. In regard to the estuary, the nitrogen contribution from Huayuankou to Lijin was minus due to the huge amount of water diversion from the Yellow River for irrigation. The phosphorus contents fluctuated in a certain range without tendency and also decreased in the later 1990s due to the desiccation. Further analyses indicated that the nitrogen transportation in the Yellow River was mostly impacted by the population and nitrogen fertilizer application, but showed no statistically significant relationship with wastewater loads. In contrast, the total phosphorus contents in the Yellow River showed no relationship with population, phosphorus fertilizer use and wastewater loads in the basin, but presented statistically significant relationship with suspended solid concentrations of the Yellow River. Calculation by regression equation indicated that the phosphorus content in suspended solids of the Yellow River was 0.54g.kg^{-1}, which was quite close to the P background value in the soil from the Loess Plateau, the intensive soil erosion area in China, through which the Yellow River flows. Therefore, it was concluded that phosphorus transportation in the Yellow River was dominantly controlled by the soil erosion from the Loess Plateau. This study can supply basis for the total nutrient load control and load allocation in the watershed and marine areas.

Grain size effect on PBDEs concentrations in sediments from the intertidal zone of Bohai Bay, China

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This research provides particle-scale understanding of PBDE distribution in sediments obtained from three intertidal flats of Bohai Bay, China. The sediments were classified into three groups: sand (particles>63 μm), coarse silt (particles 31-63 μm) and medium silt-clay (particles <31μm). In all three sediments, the total organic carbon was not associated with grain size, also the PBDE concentration as the same. But the silt-clay fraction contributed 82%, 56% and 85% of the total mass and 97%, 53% and 100% of PBDEs in Qikou estuary, Luju river and Dagu estuary, respectively. The coarse silt faction had the lowest percentage of the total organic carbon in all three sediments, although it had the highest percentage of the total mass in Dagu estuary sediment. The results indicated that the BDE209 was the dominate congener, and its distribution was not associated with grain size. Results of this