

HEAVY METAL CONCENTRATIONS AND BEHAVIORS IN SEDIMENTS OF KOREAN COASTAL WATERS

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In order to determine natural back-ground levels and behaviors of some heavy metals(Fe, Mn, Ni, Cu, Cr, Co, Pb and Zn) in coastal marine sediments around Korean Peninsula, data for 810 sediment samples were collected from various studies, and some of them were analyzed using AAS and ICP-AES. Most heavy metals were correlated well with mean grain size and Al. However, there were many outliers in data sets which showed far higher values. Through linear regression analysis using least square method and least absolute value method, we could discern sediments which were thought to be contaminated by some heavy metals, and determine threshold values of those metals between clean and contaminated sediments. Contaminated sediments were generally located in harbors and coastal inlets where industrialized facilities are located. We also did sequential extraction experiments for selected sediments. Most heavy metals in contaminated sediments were concentrated in reducible fractions and organic fraction, and this tended to depend on characteristics of each heavy metal.