

REE FRACTIONATION IN WATER-PARTICLE INTERACTION AT YANGTZE ESTUARY

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Water samples collected in the Yangtze Estuary along the salinity gradient at Nov.1998. The samples used for 'dissolved' REE determinations were filtered and acidified to pH=1.6, Unfiltered water samples for measurements of the 'total acid-soluble' REE concentrations directly acidified by HCl to pH=1.5 and filtered before analysis, the residuals also collected. The analysis of REE and Y was performed by the ICP-MS. The blanks were 2%-4%, The accuracy and precision were better than 3%. Shale-Normalized REE patterns of the three phases (dissolved, total acid-soluble, residuals) were different from each other. The dissolved load shows heavy REEs enrichment, The total acid-soluble fraction shows a convex curves that light and middle REEs enrichment, and the pattern of residual shows a concave curves that middle REEs depleted. The dissolved fraction is generally small, from 0.1% to 5% and increases from light REEs to heavy REEs. The total acid-soluble fraction is about 25%-50% of the total concentration (sum of three fraction) and increases from La to Gd and decreases from Gd to Lu. The residual possesses about 50%-70% of total concentration and decreases from La to Gd and increases from Gd to Lu. The fractionation between Ho and Y is also observed in water-particle interaction. The Y/Ho molar ratio is about 81-90 in dissolved phase, and 54-60 in acid-soluble phase, and 44-46 in residual phase.