

**CONCENTRATION ATTENUATION MODEL TO ASSESS ARSENIC, ANTIMONY,
CHROMIUM, SELENIUM AND ZINC MOBILITY IN SEDIMENTS FROM
SEPETIBA BAY, RIO DE JANEIRO**

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This study proposes a new geostatistical approach for the determination of the mobility of As, Cr, Sb, Se and Zn in sediments based on spatial distribution. The sediment samples were collected from the Sepetiba Bay, Rio de Janeiro, Brazil. The Sepetiba region plays an important role to the economy of Brazil, due to its metallurgical industries and of the Itaguaí Harbor. This bay is an example of an aquatic system that has been suffering from severe impact by human occupation and industrial activity in its basin. Total concentrations were determined by using Instrumental Neutron Activation Analysis. The results obtained showed that As, Cr and Se presented higher concentrations close to the Itacuruçá Island (northwest), a region where tourism and small shipyard activities are important. Sb presented a homogeneous distribution along the entire bay. Zn, on the other hand, presented higher concentrations in the northeastern area, close to the mouth of Guandu and Canal de São Francisco rivers, responsible for 95% of the input of fluvial water in the bay. These rivers receive industrial wastes from the industrial park, at about 3 km from the coast. The geostatistical approach (concentration attenuation model) showed that the highest attenuation values for the elements studied are at the same sites where the highest total concentrations were observed. This indicates low mobility of these elements in the Sepetiba bay.