

**DISTRIBUTION OF RADIONUCLIDES FROM U AND Th SERIES, TRACE
ELEMENTS AND RARE EARTHS IN BOTTOM SEDIMENT SAMPLES FROM
SÃO PAULO STATE COAST**

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Bottom sediment samples from four cities of São Paulo State coast, Bertioga, Cubatão, Santos and São Vicente were collected and analyzed for radionuclides from U and Th series and chemical characterization. The radionuclides Ra-226, Ra-228 and Pb-210 were measured by gamma spectroscopy using a coaxial Be-layer HPGe detector with 22% relative efficiency. Granulometric analysis shows that the majority of the sediments are compounded by silt and clay. The trace elements As, Ba, Br, Co, Cr, Cs, Fe, Na, Rb, Sb, Sc, Ta, Th, U, Zn and rare earths Ce, Eu, La, Lu, Nd, Sm and Yb were determined by neutron activation analysis. Most of the trace elements and rare earths analyzed showed lower concentrations when compared with NASC (North American Shale Composite) and earth crust values, except for As, Sb, Zr and Zn that are slightly increased, probably due to anthropogenic activities that deliver chemical elements to the marine environment. Cluster analysis and principal component analysis were applied to the radionuclides and chemical results for data interpretation and identification of anthropogenic inputs.