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Assessment of natural radionuclides of the ^{238}U and ^{232}Th series determined in soil profiles and sediment cores from Taiaçupeba reservoir, São Paulo, Brazil

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OBJECTIVE

The main goal of this work is to present preliminary results of the radionuclides ^{238}U, ^{226}Ra, ^{210}Pb, ^{232}Th, ^{228}Ra and ^{228}Th, from ^{238}U, ^{232}Th and also ^{40}K activity concentrations in two soil profiles and four sediment cores collected in the catchment area of the Taiaçupeba Reservoir.

METHODOLOGY

- Instrumental Neutron Activation Analysis (INAA) - ^{238}U and ^{232}Th
- Gamma spectrometry - ^{226}Ra, ^{210}Pb, ^{228}Ra, ^{228}Th and ^{40}K

- Grain size analysis
- Water content

RESULTS

Soil samples

- Both soil profiles presented a higher percentage of silt+clay.
- The highest activity concentrations were obtained in both profiles for ^{40}K and ^{228}Th; the lowest concentrations were for ^{210}Pb also in both profiles.

Sediment samples

- The radionuclide activity concentrations determined in sediment cores 1, 2 and 3 are in the same order of magnitude.

- Sediment core 4 presented the highest activity concentrations for all radionuclides studied, mainly for ^{232}Th and ^{210}Pb.