

The Natural Radioactivity in the Presidente Figueiredo (Brazil) Region Using Gamma-Ray Spectrometry

¹SILVA, J.R.S., ¹HIODO, F.Y. and ²FLEXOR, J-M. ¹Universidade de São Paulo, São Paulo, Brazil, ²Obsevatório Nacional, Rio de Janeiro, Brazil.

The region of Presidente Figueiredo is located in the north portion of the Amazon Sedimentary Basin and is characterized by presence of several lithostratigraphic units. A profile was carried through, using a portable spectrometer GAD-6, from the center of the basin to the north edge, totalizing 116 points. Twenty samples for analysis in laboratory by a spectrometer of low resolution were collected. Both the detectors use a scintillator crystal of NaI(Tl).

For the calibration of portable spectrometer GAD-6 were used 8 concrete pads with known concentrations of the radioelements of interest. These pads are available in the IRD-CNEN, in the city of Rio de Janeiro (Brazil). In the calibration of the laboratory spectrometer were used 3 sample-standard with known concentrations of K, U and Th. The numerical analysis of the counts gotten in the interest windows allows to determine the concentrations of the natural radioelements.

The main objective of this work was to get concentrations profiles of the radioactive elements of the natural series of the U, Th and of the K, of the measurements *in situ* and of the collected samples and to make correlations between observed contents and the local geologic features.

The gamma spectrometry technique showed to be a appropriate tool to mapping characteristic of the geologic environment crossed by the profile chosen for the present work. The contents obtained for the K, U and Th show to be correlated with the lithologic variability of the region.