Fission Track Geochronology : Calibrations at the FT Laboratory of the Rio de Janeiro State University, Brazil

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The fission-track (FT) dating laboratory of the Rio de Janeiro State University is capable to obtain FT ages under good operational conditions since november 1998. Thermal neutrons irradiations are performed in the 2 MW research nuclear reactor IEA-R1 of the National Institute of Nuclear Energy IPEN/CNEN (São Paulo, Brazil). We use position 24B shelf 5 characterized by a cadmium ratio of 3.7 measured by activation technique with gold foils. Several irradiations were made in order to test the spatial homogeneity of the neutron flow using Uranium-bearing glass slides and NIST fission track glasses. No sensible neutron flux gradients were detected through the irradiation rabbit.

Zeta values were determined by one of us from several irradiations for NIST glass 962 using Durango apatites with kapton as external detectors. A weighed value of 361±12 was obtained.

Apatites from samples of the SE brazilian metamorphic basement are presently cross-dated from aliquotes of apatite separates between the Rio de Janeiro and Grenoble laboratories. The first results of this on-going program, obtained for the Precambrian Rio de Janeiro Sugar Loaf and the Itatiaia Mesozoic alcaline massif, are in good agreement.