

## **Apatite Fission-Track Thermochronology of the Sugar Loaf, Rio de Janeiro, SE Brazil**

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The celebrated Pão de Açúcar is a partly submerged cone-shaped monolith of an augen-gneiss whose fabric is a consequence of heterogeneous shear-dominated deformation of a coarse-grained porphyroid granite. This granite belongs to a syn-tectonic batholith related to the Brasileiro orogeny (620-520 Ma) and was emplaced along the internal zone of the Ribeira belt, which runs along the SE Brazil coast between 16°S to 25°S parallels.

We dated by fission-tracks (FT) a sample of the augen-gneiss taken from the Sugar Loaf base, at an altitude of 20 m a.s.l. Aliquots of apatite separates were irradiated by thermal neutron in two nuclear reactors, respectively at the Institute of Energy Research IPEN/CNEN, São Paulo (Brazil) and the Centre d'Etudes Nucléaires of Saclay (France) and dated in the Grenoble and Rio de Janeiro laboratories. The central ages of the apatites separates are concordant and present a weighed value of  $66.3 \pm 1.3$  Ma ( $1\sigma$ ). This age is in the lower range of the « population » FT ages previously determined on apatites from other metamorphic basement samples from the Rio de Janeiro city (Fonseca and Poupeau, 1984, Anais do XXXIII Congresso Brasileiro de Geologia, vol. 5, pp. 2331-2353), of  $76 \pm 6$  to  $122 \pm 4$  Ma. These FT ages are interpreted as a consequence of the tectono-thermal events associated to the South Atlantic Ocean opening and its further geomorphological evolution.