

Preliminary apatite fission track ages at the Mantiqueira Ridge, SE Brazil Continental Rift System

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From the South Atlantic Coast to the hinterland of SE Brazil four morphotectonic domains are related to an Early Tertiary continental rifting: the Coastal Plain, the Serra do Mar ridge, the Paraíba do Sul hemi-graben and the Serra da Mantiqueira ridge.

Two samples of a Precambrian augen gneiss from the Mantiqueira ridge were dated in order to constrain the timing of the continental uplift using apatite fission-track ages.

The sample collected at the base (500 m) yields an age of 53 ± 2 Ma. The other one, collected at 910m altitude, yields an older age of 70 ± 2 Ma.

These preliminary ages are concordant to the probable Paleocene age of rifting and related sedimentary basin development. This age is corroborated by previous palynological data from proximal fanglomerates of the adjacent Resende Basin, at the Paraíba do Sul rift valley. Additionally, the fanglomerates contain rounded syenite boulders and pebbles from the adjacent 2.787m high Itatiaia Massif (66-70 Ma, K/Ar), top of the Mantiqueira Ridge. Therefore, this ridge should have been an elevated source area during sedimentation, due to the tectonic uplift of the rift shoulder.