

Sm/Nd isotopic data from the Patos region, Borborema Province: Implications for Neoproterozoic Terrane amalgamation.

¹COSTA, A.C.D., ¹HACKSPACHER, P.C., ^{1,2}DANTAS, E.L.,
³NEVES, B.B.B., ³SATO, K. ¹IGCE-UNESP, Rio Claro; ²IG-UnB,
Brasilia; ³IG-USP, São Paulo, Brazil.

The Borborema Province, of northeastern Brazil, is subdivided into two major tectonic domains; the Northern (NTD) and Southern (STD), by the Patos lineament. The NTD comprises three large crustal blocks, the Rio Grande do Norte, the Central Ceará and the NW Ceará domains, which are separated by the Senador Pompeu and Sobral shear zones, respectively. Basement gneisses and migmatites of the NTD constitute a collage of juvenile and reworked Archean to Paleoproterozoic crust. The rocks of the STD consist of Meso- to Neoproterozoic volcano-sedimentary associations (in the north) and granite-gneiss complexes (in the south), with the Pernambuco lineament marking a boundary between these main rock types.

Recent Sm-Nd whole-rock analyses of rocks collected north and south of the Patos lineament, close to the city of Patos-Pb, help confirm a major lithospheric discontinuity (possibly a Neoproterozoic suture) across this feature. Migmatitic gneisses north of lineament in this area yield T_{DM} model ages between 3.2 and 2.6 Ga, whereas garnet-bearing schists and other metasedimentary rocks south of Patos yield T_{DM} model ages between 1.6 and 1.3 Ga. Nd data from the NTD indicates that the migmatitic gneisses are either Archean or have a large Archean crustal component. U-Pb zircon dating of these gneisses will provide an answer to this question. The Nd data from the STD are consistent with earlier studies in the region, indicating that the rocks are Mesoproterozoic and younger.