

Sm/Nd isotopic patterns of the Guaxupé, Alto Rio Grande and Socorro domains, south of the São Francisco Craton, Brazil.

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Based on Sm/Nd data three domains have been distinguished in the Ribeira Belt south of São Francisco Craton. The Ribeira Belt comprises Paleoproterozoic to Archean basement overlain by younger metasediments which were intensely affected by the Brasiliano collision (650-550 Ma.), deformation commenced with ductile thrust tectonics, followed by a ENE- WSW dextral transpressive tectonic regime, responsible for the actual domain feature.

The Guaxupé Domain (GD), to the north, is composed of granulites, orthogneisses, migmatites and granites, with T_{DM} values between 1.2 and 1.8 Ga.

The Socorro (SD), to the south, is constituted by granulites, gneisses, migmatites (655 Ma U/Pb zircon) and granites, with T_{DM} between 1.3 and 1.7 Ga.

The GD/SD domains possess the same isotopic signatures and identical metamorphic and tectonic conditions. A complex crustal evolution is identified, probably through the mixture between old and new crust. The T_{DM} (> 1.2 Ga) and negative epsilon Nd values precludes the presence of juvenile Brasiliano crust.

The Alto Rio Grande Domain, located between the GD and SD is composed of orthogneisses (Rb/Sr between 2.15 and 1.9 Ga and T_{DM} between 2.5 and 2.2 Ga) and migmatites of the basement complex and supracrustals units, retrometamorphosed to greenschist facies. The positive and negative Nd values, of the basement complex, suggest different types of Paleoproterozoic continental crust generation, involving accretion and reworking of old Archean crust.