

Tectono-magmatic evolution of the Occidental Terrane of the Neoproterozoic Ribeira Orogenic Belt, southeastern Brazil

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The Occidental terrane (OcT) is envisaged as the eastern/southeastern reworked margin of the São Francisco/Rio de La Plata (SFRPP) plate related with E-vergent subduction under the Congo plate. The syn-collisional stage resulted on intense westward deformation of the OcT and intermediate pressure metamorphism while the late-collisional stage resulted on subvertical folding and steep shear zones. Both stages were associated with voluminous crustal derived granitoid rocks.

Based on U/Pb geochronology, geochemistry and time relationship with deformation the magmatic record was subdivided into three episodes: 1) the early -to-syn-collisional stage (595-565 Ma) is represented by foliated peraluminous S-type and metaluminous I-type granites; 2) the syn-to-late-collisional stage (565-540 Ma) comprises weakly foliated metaluminous I-type granites with basic enclaves and minor two-mica peraluminous S-type leucogranites; 3) the late-collisional stage (540-520 Ma) consists of alkali-calcic slightly peraluminous leucogranites, which occur as subvertical dikes and plutons related to D3 shear zones.

Preliminary Sm/Nd isotopic data indicate: the late-collisional granitoids were derived from the reworking of basement rocks; and the early-to-syn-collisional S-type granitoids were generated by the melting of mixed sources such as metasediments of Paleoproterozoic provenance, 1,0-0,9 Ga basic rocks and possibly another unknown Mesoproterozoic source.