

The São Roque - Açungui Neoproterozoic Backarc Basin, Southeast Brazil: U/Pb geochronology in metavolcanic and metabasic rocks

¹HACKSPACHER, P.C., ^{1,2}DANTAS, E.L., ³SPOLADORE, A.,
¹FETTER, A. and ¹GODOY, A.M. ¹IGCE- UNESP, Rio Claro;
² IG- UnB, Brasília; ³DG-UEL, Londrina, Brazil.

The Ribeira Belt of southeastern Brazil represents an important manifestation of the Brasiliano Orogeny formed during the West Gondwana assembly. New U/Pb zircon geochronological data, from metavolcanic and metabasic rocks of the São Roque and Açungui supracrustal groups, low grade volcano-sedimentary sequences, permit the reconstruction of part of geological evolution of this fold belt as developed in a backarc basin tectonic environment.

Zircons of the basal metavolcanic rocks of the São Roque Group, characterized by E-MORB subalkaline tholeiitic basaltic rocks, indicate a crystallization age of 608 Ma. Another hand, zircon data from metagabros and zircon of metabasic rocks of the Açungui Group yield crystallization ages of 615 and 619 Ma, respectively.

Paleogeographical reconstruction of the Ribeira Belt considered a metavolcanic sequence for the São Roque/Açungui groups around 610 Ma, representing an extensional sequence, which features of a small backarc basin during the syn-collisional phase of the Ribeira Belt.

Nd isotopic signature of these metavolcanic rocks indicated that they were derived from older Paleoproterozoic to Archean lithospheric mantle, with a complex history involving the mixture between young and old less enriched mantelic source.

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