



AGLUTINATION OF A NEOPROTEROZOIC PROTO-CONTINENT DURING THE WESTERN GONDWANA COLLAGE: TECTONIC SETTING OF THE SOUTHERN BRASÍLIA OROGEN

CAMPOS NETO, M.C., BASEI, M. A. S., JANASI, V.A., MORAES, R., GARCIA, M.G.M., SIGA JR., O.

camposnt@usp.br

Instituto de Geociências, Universidade de São Paulo, SP – Brazil

Keywords: zircon SHRIMP geochronology, monazite U-Pb, Sm-Nd and Sr isotopy, geochemistry, continental collision.

Abstract

The southern Brasília Orogen is organized in a pile of rootless nappe complex that records the Neoproterozoic history of the collision between the São Francisco Plate, as a passive margin, and Paranapanema plate, as an active margin. The upper giant allochthon is a Cryogenian/Ediacaran deep section of Andean-type magmatic arc. It thrusts a thick slice of high-pressure metamorphic rocks, ranging from granulite to mid-amphibolite facies, which presents an inverted metamorphic pattern acquired in subduction-collision zone; this is an intermediate nappe system. The lower allochthon is another metasedimentary nappe system, made of linear clastic shorelines, displaying northeastward basinal marine black shale and bearing high-pressure green-schist to lower amphibolite facies mineral assemblages. It was thrust directly over the oldest rocks of the São Francisco craton margin.

In the intermediate nappes, Rt-Qtz-Cpx-Grt retroeclogites are derived from high-Ti tholeiitic basalts, whereas other amphibolite rocks are derived from calc alkaline basic rocks. They occur as lenses in kyanite-bearing metapelites. Zircon grains, from these metabasic rocks, were dated by SHRIMP and yielded 670 Ma and was interpreted as the age of the magmatism.. Similar age is depicted by detritic zircon grains of massif and thick pack of metawackes (flysch deposits). Both rocks present Nd and Sr isotopic juvenile signatures that are not common to a passive margin source. Migmatitic orthogneisses that occur in windows and slices in this intermediate nappe system have 2.1 Ga and isotopic signature of juvenile source, suggesting a Rhyacian island arc.

The age of the main metamorphic event evidence an outward migration of the collision-related deformation, from *ca.* 625 Ma, to 610 Ma, up to 590 Ma, respectively for the upper, intermediate, and lower systems of nappes.