

Cryogenian Ages (Rb-Sr, U-Pb) for Peak Metamorphism and Exhumation of Anápolis Granulites, Central Goiás, Brazil.

¹CORREIA, CT; ¹TASSINARI, CCG; ¹ETTER,AFV. ^{1*}Instituto de Geociências - Univ. de São Paulo, Brazil.

In the central/eastern part of Tocantins Province, in central Brazil, a Neoproterozoic orogen located between the Amazon and São Francisco Cratons, includes granulites of the Anápolis-Itaçu Complex exposed in between the supracrustal rocks of the Araxá Group. These rocks comprise basic ortho-derived granulites locally interbanded with felsic granulites. Among these lithologies materials formed by melting under high grade metamorphic conditions occur. Using previous whole rock Rb-Sr data, together with two new determinations, for the granulites, an age of 743 ± 43 Ma with an $R_i = 0.70959 \pm 0.00073$, and $MSWD = 1.651$ was obtained. Rounded zircons from the banded granulites show concordant $^{206}\text{Pb}/^{238}\text{U}$ age of 634 ± 15 ma. Zircons with similar morphology of the younger remobilized zones surprisingly show very similar concordant $^{206}\text{Pb}/^{238}\text{U}$ age of 640 ± 13 Ma. This U-Pb ages are in the same interval of other Sm-Nd mineral isochrons for this granulites, found in literature. Moreover, several other Sm-Nd and U-Pb SHRIMP data previously published for other units in the region, indicate that the peak metamorphism under compressive tectonism during Neoproterozoic collisional regimen, occurred in the area at 780 Ma, in agreement with the Rb-Sr age. The fact that the ages obtained for the granulites and for the younger remobilized felsic material are very similar implies that the phase of exhumation from the dry granulite environment to less intense high-medium pressure levels (partial melting episode) occurred at 630-640 Ma, ca.150 Ma later, after the peak metamorphism. The older age displayed by the Rb-Sr system suggest that it has been closed in higher P-T conditions than the Sm-Nd and U-Pb.

This research is supported by FAPESP grants 95/4652-2, and 97/00640-5. * Student supported by CNPq/PIBIC scholarship.