

GEOOTHERMOBAROMETRY OF GRANITOID ROCKS: A CASE STUDY FROM THE NEOPROTEROZOIC CUNHAPORANGA GRANITIC COMPLEX, SOUTHERN BRAZIL

1GUIMARÃES, G.B., 2ULBRICH, H.H.G.J. and 2JANASI, V.A. 1Geoscience Department, State University of Ponta Grossa, Brazil; 2Geoscience Institute, University of São Paulo, Brazil

The Cunhaporanga Granitic Complex crops out for 2500 km², as a major unit of the Neoproterozoic Ribeira Fold Belt, elongated concordantly with the regional NE-SW strike. Contacts to the E with a low-grade metamorphic belt are intrusive, while to the W, with volcano-sedimentary molassic rocks, are mainly tectonic. Its NE and SW terminations are covered by Silurian and younger rocks of the Paraná Basin. The granites follow a modal and geochemical I-type high-K calc-alkaline trend, including hornblende-biotite monzogranites and granodiorites, biotite monzo- (to syeno) granites and minor amounts of muscovite-biotite monzogranites and granodiorites. A distinctive group of late minor intrusions made up of alaskitic alkali feldspar granites (Joaquim Murtinho and Serra do Carambeí Granites) is akin to A-type rocks. Estimates of intensive parameters were made using zircon and apatite saturation thermometry, equilibria involving hornblende and plagioclase, and petrography. The main calc-alkaline suite of the Cunhaporanga Complex intruded in shallow-level conditions, with pressures mainly in the 2-4 kbar range. Liquidus temperatures, as estimated by apatite saturation thermometer, are up to 950°C. Solidus temperatures are 710°-790°C (edenite-tremolite thermometer); these relatively high values suggest water-undersaturated solidus. The alaskitic granites emplaced in even shallower conditions (2.2 kbar; probably near 1 kbar); the zircon saturation temperatures are ~ 830°-870°C, similar to values proposed in the literature for A-type liquidus.