

U-PB AND SM-ND ISOTOPIC STUDIES OF CAMPO ALEGRE AND GUARATUBINHA VOLCANOSEDIMENTARY BASINS, SOUTHERN REGION

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An important landmark in the evolution of the gneissic-migmatitic terranes located between the Ribeira (North) and Dom Feliciano (South) belts is represented by expressive volcanism, related to the development of several extensional volcanosedimentary basins. The U-Pb (conventional and SHRIMP zircon) data obtained for rhyolitic rocks from the Campo Alegre (598 \pm 29Ma) and Guaratubinha (604.6 \pm 8.6Ma) basins, indicate the 600 \pm 10Ma interval as the most important in the generation of this volcanism. These data are in good agreement with SHRIMP results for Campo Alegre basin which gave an age of 595 \pm 16Ma for zircons extracted from the same rocks dated by conventional techniques. The Sm-Nd model ages (TDM) fall between 2,200-1,850 Ma, characterizing periods of mantle differentiation in the Paleoproterozoic for the crustal protoliths of these rhyolitic rocks. ϵ Nd values, when calculated for the time of formation of these rocks (600 Ma), are negative (between -7 and -15), suggesting a relatively long time of crustal residence. This expressive volcanism is here interpreted as a result of extensional tectonic regimes, which affected the southern Brazil, immediately after the end of the Neoproterozoic compressive regimes associated with the development of the adjacent fold belts. Such extensive tectonic regimes are here interpreted as adjustments to reach greater stability, after the thickening caused by the preceding compressive events.