

Isotopic signature (Sm/Nd) of metasediments from central Ribeira belt, SE Brazil

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The Neoproterozoic Ribeira belt extends along the Brazilian Atlantic Coast. Its central segment is composed by two tectono-stratigraphic terranes. In general terms, each tectonic domain comprises: pre-1.8 Ga basement rocks, post-1.8 Ga metasedimentary cover and Brasiliano-Pan African granitoids. The age of sedimentation may range between the age of basement rocks (about 2.0 Ga) and the age of intrusive granitic rocks (640-500 Ma). Regardless of the uncertainty in relation to the tectonic setting and the time of sedimentation, the preservation of detrital sedimentary successions provides a record of the continental crust that was exposed and subject to erosion at the time of deposition. In this way, some differences were observed between the two tectonic domains of the belt:

Occidental terrane: the metasediments show two groups of rocks with the same Nd depleted mantle model ages (T_{DM}) of ~ 2.5 Ga, but different $\varepsilon_{Nd}(0)$ values: one with values of about -30 and another with values ~ -17 . A third group displays $T_{DM} \sim 2.0$ with $\varepsilon_{Nd}(0)$ values ~ -20 . These data suggest that the local basement was the main source of the sediments.

Oriental terrane: the data of the Paraíba do Sul Klippe metasediments present a strong correlation with petrographic and field data. The psammo-pelitic units display $T_{DM} \sim 2.1$ Ga and the metapelitic intermediate unit yields T_{DM} of 1.7 Ga. In both cases, the $\varepsilon_{Nd}(0)$ values are very different. The allochthonous character of Paraíba do Sul Klippe preclude any paleogeographic reconstruction with the actual data.