



Sm-Nd ISOTOPIC BEHAVIOR OF PRE-BRASILIANO TERRANES AND BRASILIANO GRANITES OF THE EASTERN PART OF THE TRANSVERSAL ZONE -NE BRAZIL

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ABSTRACT

Sm-Nd isotopic studies were carried out to recognize and define two different groups of geologic-tectonic terranes of the eastern most part of the Transversal Zone ? (central sub-province) of the Borborema Province, northeast of the South American Platform. The first recognized group (I) formed by gneisses of supracrustal origin (minor plutonic components) is the Alto Pajeú Terrane -APT- that exhibits an isotopic signature with TDM values between 2.0 Ga and 1.0 Ga, high negative values for Nd (< 20) and with $\text{Sm}^{147}/\text{Nd}^{144} > 0,12$. The second group (II) is composed mostly by orthogneisses (a minor supracrustal belt-Sertania complex) the Alto Moxotó Terranes -AMT- exhibits an isotopic signature with higher TDM values, between 3.0 Ga and 2.0 Ga, very negative values for Nd, between -20 and -35, and $\text{Sm}^{147}/\text{Nd}^{144}$ lower than those of the group I, i.e. between 0,12 and 0,08. The Nd values calculated for the assumed ages of both groups are respectively: group I Nd (950) = - 14 up to + 1,28; group II Nd (2.000) = - 11,26 up to + 9,73.

Additionally these distinct isotopic patterns worked out as a complementary tool for the geological mapping, as well as, they have gradually been reiterated by means of the study of the Brasiliano granitic plutonism (Ediacaram in age) that occurs piercing both, APT and AMT. Data obtained by other geochronological methods (U-Pb and Rb-Sr) for these granites and for the pre-Brasiliano terranes themselves were in good agreement with these above discriminated patterns.