

STUDY OF SEDIMENTARY PROVENANCE OF NEOPROTEROZOIC SEQUENCES ALONG PATOS LINEAMENT WITH U/PB AND SM/ND METHODOLOGIES (BORBOREMA PROVINCE, NE OF BRAZIL)

JOHN MAURICIO R. BAUTISTA¹, MARIA HELENA BEZERRA MAIA DE HOLLANDA¹,
CARLOS JOSÉ ARCHANJO¹

1- Programa de Pós-Graduação em Geoquímica e Geotectônica/Instituto de Geociências/USP.

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The Borborema Province is a crustal domain located in northeastern Brazil, with a tectonic configuration that resulted from the accretion of crustal blocks along shear zones. The Patos Shear Zone, among the important ones, is one of the main sutures produced by the Brazilian Cycle. This structure is characterized by the presence of E-W-trending diverse migmatites and orthogneisses, including the regionally known Lavras da Mangabeira supercrustal formation and a sequence in the Cajazeiras-Coremas (PB) region considered as analogous to the Seridó Group. Metasediments of the Lavras da Mangabeira Formation are discordant on the basement. It comprises of metaconglomerates and quartzites at the base and micaschists and phyllites at the top. The metaconglomerates and quartzites have provenance signatures with model T_{DM} ages between 2,7 - 2,5 Ga, and U/Pb in detritic zircon provenance model defined by populations with ages between c. 3,4 and 2,0 Ga, with main peak at c. 2,2 Ga. The zircons from the metapelitic lithologies show U/Pb ages dominantly Neoproterozoic between 1,1 - 0,55 Ga, with maximum peaks of provenance at c. 0,65 and c. 0,73 Ga.

The Seridó Group in the studied area is defined as an area-type in the Seridó Belt, including paragneisses and marbles of the Jucurutu Formation, quartzites from the Equador Formation and the metaturbidites of the Seridó Formation. Detritic zircons in the paragneisses give ages between 1,1 - 0,6 Ga, including minor contributions from the Archean and Paleoproterozoic populations. On the contrary, the quartzites from the Equador Formation give model TDM ages between 2,7 e 2,5 Ga, with detritic zircons having Archean to Paleoproterozoic ages similar to those obtained in the basal sequence of the Lavras da Mangabeira Formation. This provenance model is strongly suggestive in the fact that the studied metasedimentary rocks (Lavras da Mangabeira and the Cajazeiras-Coremas sequence) are supposed to be part of a unique basin which together with the Seridó Group in its area-type, was isolated by the transcurrent deslocation of the Patos Shear Zone.

