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U/PB SHRIMP GEOCHRONOLOGY OF THE AUGEN GNEISSES FROM THE SERIDÓ BELT (BORBOREMA PROVINCE): GEODYNAMIC SIGNIFICANCE

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U/Pb Sensitive High Resolution Ion MicroProbe (SHRIMP) zircon ages from augen gneiss occurring in the Seridó Belt (Borborema Province) yielded crystallization ages about ca. 2.2 Ga and ca. 1.75 Ga. These data place new constraints on the geodynamic significance of the Seridó since even recently these metaplutonic rocks have been used to support a polyorogenic evolution to the belt. Augen gneisses from the central Seridó (São Rafael, São José do Seridó and Santana do Matos) form sheet-like intrusions emplaced close to the metasediments of the Jucurutu Formation. Along the contact these rocks are strongly deformed by low- to moderate dipping shear zones. Cathodoluminescence zircon images reveal euhedral crystals with characteristic oscillatory magmatic zoning, some of them with typical inherited cores. The laser spot on the oscillatory zoning of zircons from São Rafael augen gneiss yielded discordant U/Pb ages in consistency with episodic Pb loss pattern at ca. 580 Ma. The upper intercept, however, remains fairly well-defined at about ca. 2200 ± 30 Ma. Near Concordia zircon ages occurs in São José do Seridó (2200 ± 12 Ma) and Santana do Matos (2210 ± 8 Ma) augen gneisses. Whole-rock Sm/Nd model ages between 2.7 and 2.8 Ga and negative ϵ_{Nd} indicate such rocks are indistinguishable from the Paleoproterozoic Caicó basement complex. Thus, its contact with the younger Jucurutu Formation must correspond elsewhere to a regional unconformity and not an intrusive contact. In contrast with the sheet-like intrusion of the central Seridó, larger and weakly to moderately deformed augen gneisses plutons intrusive into the Paleoproterozoic basement rocks occur to the west. Zircons from the Serra Negra pluton are clear, euhedral with concentric compositional zoning attributed to a magmatic origin. Data plot near to Concordia with weighted mean $207Pb/206Pb$ age of 1742 ± 9 Ma (MSWD = 0.67; prob. = 0.77). Such a plutonic activity has to be connected with intraplate volcanism found further west in the Serra de São José and in the Orós belts. This implies that the Jaguaribe and Caicó complexes must be grouped in a single unit, in which the sediments of the Seridó Group were deposited in the Neoproterozoic.