

Nova Brasilândia Group, southeastern Rondônia: Continental accretion and tectonic implication

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The Nova Brasilândia Group (NBG) is a metaplutonic-sedimentary sequence with significant metallogenetic potential in the southeastern of Rondônia. The plutonic association consists of metagabbros sills, metadiabases and amphibolites, while the metasedimentary rocks consist of a siliceous-clastic-carbonatic turbiditic unity (paragneisses, mica schists and calc-silicate rocks), deposited in deep-sea environment. Two pulses of granitic magmatism intruded into NBG rocks. The oldest, syntectonic phase strike-slip-related, yielded an $1,113 \pm 56$ Ma age, while the youngest, late to post-tectonic, high-level A-type granitoid plutons, produced an $1,005 \pm 41$ Ma age. Both magmatic pulses were ascribed to the 1,200-1,000Ma Sunsas Orogeny, already recognised in the adjacent Bolivian shield. The oldest age is also interpreted as the maximum age of the regional deformation, under high-temperature, low-pressure (HT/LP) conditions and was associated to local melting (migmatization) of the metasedimentary component. The geochemical data of the metabasites indicate P-MORB tholeiitic affinities. The metaturbidites show compositional and chemical characteristics suggestive of a mixed continental source, with detrital zircons indicating a maximum deposition age of $\sim 1,200$ Ma. Accordingly, the adjacent Serra da Providência granitoids and the metadacites of the Roosevelt sequence are the best candidates for sediments sources. The geotectonic scenario for the NBG evolution includes an initial intracontinental rifting opening, followed by a proto-ocean floor expansion. Isotopic data on the metabasites indicate significant juvenile addition to the continental crust during the Sunsas-Aguapei Orogeny evolution.