



**TRACE ELEMENT GEOCHEMISTRY AND Sr-Nd CHARACTERISTICS OF
MESOPROTEROZOIC MAFIC INTRUSIVE ROCKS FROM RONDONIA, SW
AMAZONIAN CRATON: NEW PETROGENETIC INSIGHTS**

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ABSTRACT

Rocks of the Serra da Providência Intrusive Suite are related to bi-modal magmatism and are represented by A- type rapakivi granites, charnockites and mangerites genetically associated with diabase dikes, gabbros and amphibolites. Geochemical and isotopic data suggest that the original mafic melts derived from a depleted mantle source. Underplated mafic magma induced melting of a short-lived felsic crust, thus originating coeval felsic-mafic magmatism in accordance with the model presented by Payolla *et al.* (2002) favoring a continental intraplate setting. The Colorado Complex comprises monzonite gneisses associated with amphibolite, gabbro and metadiabase dikes intercalated with schist, metaturbidite and BIF. The intrusive mafic-felsic bi-modal magmatism dates from 1.337Ma -1.552Ma. Mafic rocks and monzonite gneisses display juvenile signatures. Mafic samples are much less contaminated than the Serra da Providência and Nova Brasilândia ones. U/Pb zircon detrital ages of metaturbidites are $> 1,35 \text{ Ga} < 1,42 \text{ Ga}$, contemporaneous with sedimentation. The model here suggested relates the generation of the Colorado basaltic magma to the subduction of an oceanic slab into the peridotite wedge. According to this model the Colorado Complex began in an island arc setting. The Nova Brasilândia Sequence includes bi-modal magmatism (970 Ma -1.025 Ma) characterized by metadiabases, gabbros, metagabbros and amphibolites associated with granitic plutons intruding paragneisses, mica schists, and calc-silicate gneisses. The original tholeiitic magmas, derived from a depleted source, underwent crustal contamination by metasedimentary host rocks. Isotopic and geochemical data are in accordance with the model of Rizzotto *et al.* (2001), relating the development of the Nova Brasilândia Sequence to an intracontinental rift setting.