

PALEOPROTEROZOIC GRANITIC MAGMATISM IN THE CONTENDAS-MIRANTE REGION, BAHIA, BRAZIL.

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ABSTRACT: The Contendas-Mirante metavolcano-sedimentary sequence (CM), located in the southern portion of the Contendas-Jacobina Lineament (CJL), lies approximately in the suture zone between the Archean Gavião and Jequié Blocks and is intruded by a set of eight granitic intrusions that have been largely unstudied. This work provides new petrographic and geochemical evidences as well as the first zircon U-Pb geochronological and Hf isotopic data for these plutons, being the first one to study in more details this paleoproterozoic granitic magmatism and contextualize it with the tectonic evolution of the region. Geochemical constraints on the nature of the sources of these rocks are also presented. Two datasets of zircon U-Pb ages were obtained via LA-ICP-MS: one by using a Thermo Element 2 SF SC ICP-MS coupled to a ASI Resolution M-50-SE Excimer laser and the other by using a Thermo-Finnigan Element 2 sector field ICP-MS coupled to a CETAC ultraviolet laser (LA-SF-ICP-MS). These granitoids belong to two distinct groups: the first one has ASI < 1.1, Na₂O > 3.0 wt% and K₂O < 5.5 wt%; relative enrichment in LREE, slightly flat HREE patterns and weak negative Eu anomalies. The other group has ASI > 1.1 and K₂O > 5.5 wt% and Na₂O < 3.0 wt%; relative enrichment in LREE, flat HREE patterns, with strong negative Eu anomalies. Thus, this work consists in the first ever record of two different groups of granites in the CM region. They both have zircon ²⁰⁷Pb/²⁰⁶Pb ages between 1971 and 2120 Ma, indicating that the granites are Paleoproterozoic. These zircons have 2:1 to 4:1 aspect ratios and show moderate-to-strong oscillatory zoning, indicative of magmatic origin. The granites of the first group have negative ε_{Hf} values between -42.3 and -3.3 and TDM2 ages between 2.8 and 4.3 Ga indicative of the contribution of old crust to their generation. The ones from the second group have negative ε_{Hf} values between -17.8 and -15.7 and TDM2 ages between 3.3 and 3.6 Ga, suggesting that older crustal reworking contributed to their origin.

KEYWORDS: PALEOPROTEROZOIC, GRANITIC MAGMATISM, CONTENDAS-MIRANTE

