Paleoproterozoic granitic magmatism in the Contendas-Mirante region, Bahia, Brazil.

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The Contendas-Mirante metavolcano-sedimentary sequence (CM) [1] 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. 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: one with 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 have zircon 206Pb/238U ages between 1980 and 2086 Ma, indicating that the granites are Paleoproterozoic. These zircons have 2:1 to 4:1 aspect ratios and show moderate-to-trong oscillatory zoning, indicative of magmatic origin [2]. The granites of the first group have negative ƐHf 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 ƐHf 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.

[1] Marinho et al., (1979) Projeto Contendas-Mirante: relatório final; [2] Corfu et al., (2003) Rev. Min. Geochem. **53,** 469-500.