

## **ND ISOTOPIC CONSTRAINTS ON THE PROTOLITH AGE OF THE ARCHEAN IMATACA COMPLEX, VENEZUELA**

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The Archean Imataca Complex (IC), NW Amazon Craton, forms a ENE-fault-bounded block juxtaposed to the Paleoproterozoic Maroni-Itacaiúnas belt. It comprises polyphase para- and calc-alkaline gneisses, supracrustal rocks, and subordinate migmatitic and anatexic rocks. Intrusive quartz-monzonite sills and plutons are also present, tectonically related to the Transamazonian orogeny. IC rocks have TDM model ages mostly between 3.23 - 3.00 Ga and 2.90 - 2.80 Ga, suggesting that two major mantle-differentiation events took place in the evolution. Additional Rb/Sr dates sign that migmatitic injection, crust reworking and regional high grade metamorphism took place at 2.78 - 2.67 Ga, as also supported by the  $\epsilon_{Nd}$  (2.78Ga) values (+1.13 to -4.93). A gray gneiss gives the oldest TDM age of 3.41 Ga, whereas a granitoid yields 2.60 Ga - an evidence for crustal zoning within IC. Paleoproterozoic granitoids intrusive into the northern region of the IC are crustal derived, as indicated by the TDM ages (2.95 and 2.85 Ga) and  $\epsilon_{Nd}$  (2.10Ga) values of -4.20; -4.93. The granitic intrusions to the south have contrasting TDM ages between 2.29 and 2.21 Ga, showing positive  $\epsilon_{Nd}$  (2.1Ga) values (+3.05 to +0.74). Such a signature is consistent with a Paleoproterozoic magmatic arc scenario along the southern-southeastern edge of the Archean crust.