

## U-Pb (LA-ICP-MS) DETRITAL ZIRCON AGES FROM THE JAGUARETAMA COMPLEX: IMPLICATIONS FOR RHYACIAN - STHATERIAN GEOLOGICAL EVOLUTION

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**ABSTRACT:** Geological mapping of Bonhu sheet 1:100.000 is recently published in Geological Survey of Brazil. The area is located in northeastern of Ceará state, between the Ceará Central and Jaguaribeano domains of Borborema Province. These terranes or domains are limited by extensive shear zone which in this case of NE-SW direction includes the Senador Pompeu shear zone, that consistently display evidence of dextral transcurrent shearing. This study extends east of this shear zone where outcrop rocks of migmatized metasediments attributed to the supracrustal rocks of *Jaguaretama Complex* of Paleoproterozoic age. Also, this region occur belts of metasedimentary rocks that are compressed in shear zone and bordered by porphyry monzogranite gneiss related to *Serra do Deserto Magmatic Suite* of Statherian age. In this contribution, we present detrital U-Pb zircon data comes from outcrop of graphite-garnet-biotite gneiss metatexite from supracrustal rocks of *Jaguaretama Complex* and U-Pb geochronological data in porphyry monzogranite gneiss from *Serra do Deserto Magmatic Suite*. The cathode-luminescence images show that most of the detrital zircon grains analyzed display overgrowths and inherited core with nice igneous oscillatory zoning. Single-grain LA-ICP-MS U-Pb dating on these detrital zircon grains show only Paleoproterozoic  $^{207}\text{Pb}/^{206}\text{Pb}$  ages, clustering from 1973 to 2511 Ma, with frequency peaks at ~ 2.45, 2.35, 2.19, 2.14 and 2.04 Ga. For the youngest (2.04 Ga) age peak, a group of 10 metamorphic zircon grains and overgrowth was identified by their very low Th/U ratios (<0,004) and cathode-luminescence images. The  $^{207}\text{Pb}/^{206}\text{Pb}$  ages in the metamorphic zircon and overgrowth vary from 1.97 to 2.10 Ga time intervals which fall into the range of the regional Transamazonian/Eburnean orogeny, and also represent the minimum depositional age for the supracrustal rocks of *Jaguaretama Complex*. The U/Pb dating of zircon cores suggests that the sedimentary protoliths mainly derived from Rhyacian igneous sources, with well-defined peaks of 2.14 and 2.19 Ga, probably resulting from erosion of arc-magmatic rocks, well known at the Borborema Province. For the Siderian frequency peaks at ~ 2.35 and 2.45 Ga, the igneous sources probably represent at the NW Ceará domain and the SE Granjeiro Complex with recently dated Siderian rocks. In addition, two zircon grains of Neoproterozoic ages (~2.51 Ga) evidence the involvement of older source rocks in this domain. After the Paleoproterozoic collage, the next event that is clearly identified in the region was the intrusion of the *Serra do Deserto Magmatic Suite*, represented by augen gneiss of monzogranite composition, dated in  $1793\pm 5$  Ma, which recording the rifting of a pre-existing crust (2.2- 2.0 Ga) and followed by deposition of sedimentary rocks of Orós Group.