

THE ITAIACOCA GROUP: U-Pb (ZIRCON) RECORDS OF A NEOPROTEROZOIC BASIN

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The main objective of this work is to discuss the U-Pb ages obtained for zircon grains from metavolcanic rocks of the Itaiacoca Group. The Itaiacoca Group is a metavolcano-sedimentary sequence which occurs as a narrow belt between the Cunhaporanga granite batholith to the northwest and the Itapirapuã shear zone to the south and southwest, which separates the sequence from the Três Córregos granite batholith and metasedimentary rocks of the Açungui Group. Geological studies of the southern part of the Itaiacoca belt led to the recognition of three units, represented by (from base to top) metawackes with an important volcanic component, metacarbonate, metapelitic and metapsammitic rocks.

The U-Pb geochronological analyses of zircon grains from two outcrops of metavolcanic rocks yielded ages of 628 ± 18 Ma (SHRIMP) and 636 ± 30 Ma (conventional multi-grain analysis). These ages suggest that the Itaiacoca Basin developed during the Neoproterozoic at about 630 Ma, slightly before the formation of the granitic batholiths which are believed to be magmatic arcs. The metamorphism which affected the sequence seems to have occurred soon (10-15 Ma) after its deposition, which suggests that basin closure was rapid. This scenario could imply that the initial tectonic situation was a back-arc basin which evolved as a function of the collisional process and its accompanying magmatic activity into an intra-arc basin and, later still, into an interarc basin during the closing phases of the Neoproterozoic.