

U-Pb SHRIMP dates the latest Brasiliano collisional peak in the Rio de Janeiro suite, south-eastern Brazil

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The ongoing review of the 1: 250,000 geological maps of the Rio de Janeiro state (by the Geological Survey of Brazil staff) has been an important field-laboratory to test the supposedly diachronous evolution of the Brasiliano Ribeira belt: the Mid Brasiliano (650–590Ma) Ribeira belt and the Late Brasiliano (590–500Ma) NE Ribeira branch.

In order to obtain robust isotopic ages, three plutons from the NE Ribeira branch were targeted to be dated by the U-Pb SHRIMP systematics: the Corcovado and Pão de Açúcar granites (Rio de Janeiro suite) and the Serra dos Órgãos batholith. They are foliated, thrust-related plutons displaying protomylonitic overprinting and chemical signatures akin to the Australian I-type, calc-alkaline, continental arc granitoids. The Corcovado granite is, in turn, peraluminous, suggesting strong involvement of metasedimentary sources. They are assigned to the continent-continent South America and Africa collision during the Gondwanaland assembly.

The obtained ages are equivalent within error: Pão de Açúcar (Sugar Loaf) granite $\sim 559 \pm 4$ Ma; Corcovado granite $\sim 560 \pm 7$ Ma and Serra dos Órgãos batholith $\sim 569 \pm 6$ Ma. As these thrust-related plutons post-date in ca 70Ma the Mid Brasiliano Ribeira collision (~ 630 Ma), they are key elements for the recognition of the Late Brasiliano, NE Ribeira branch collision.