



PALEOPROTEROZOIC EVOLUTION OF THE MINEIRO BELT, SÃO FRANCISCO CRATON, BRAZIL.

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ABSTRACT

The Mineiro belt occurs along the Southern São Francisco Craton, and associated with the Paleoproterozoic crustal growth, collision and extensional collapse, diachronic metamorphism (2.131 Ma -2.121 Ma; 2.059 Ma-2.028 Ma) overprinted the Neoarchean foreland. The orogen produced plutonic pulses (2.250 Ma-2.200 Ma; 2.190 Ma-2.160 Ma; 2.130 Ma-2.040 Ma) either by intraoceanic dynamics with minor recycling of material formed in previous accretionary phases, or by partial melting of Archean crust. The oldest plutons (e.g., Serrinha suite; U/Pb and ²⁰⁷Pb/²⁰⁶Pb ages between 2.239 Ma ± 25 Ma and 2.207 Ma ± 4 Ma) yield T_{DM} ages (2,6-2,3Ga), ε_{Nd(t)} values (-0,8 to +1,8) and ⁸⁷Sr/⁸⁶Sr_i ratios (≤0,703) suggesting the protholiths derived predominantly from Paleoproterozoic juvenile sources, originated in an intraoceanic arc zone. The Mantiqueira gneisses give a few similar U/Pb ages (2.203 Ma to 2.210 Ma) revealing a protracted magmatic evolution which may be genetically linked with the Serrinha event -as products from NW-SE subduction of oceanic lithosphere occurring outboard of the evolving passive margin. Another plutons to the north yielded U/Pb and ²⁰⁷Pb/²⁰⁶Pb ages from 2.191 Ma ± 9 Ma to 2.101 Ma ± 8 Ma; the T_{DM} ages (2,5 Ga to 2,7Ga), and ε_{Nd(t)} values (-1,3 to -5,1) indicating Archean components participated as magma source for the protholiths. Most of the Mantiqueira orthogneisses yield comparable U/Pb ages (2.180 Ma-2.160 Ma; 2.102 Ma-2.040 Ma); and T_{DM} ages between 3,4-2,9Ga (ε_{Nd(t)} from -10 to -13) and 2,7-2,4Ga (ε_{Nd(t)} from -7 to -3). These youngest granitoid pulses may be therefore considered as inboard plutonism, resulted from a later, inverted (SE-NW) subduction of the lithosphere below the active continental margin, after stacking of the 2,25 Ga-2,20 Ga accretionary prism (e.g., Serrinha suite).