



Rift to Post-rift evolution of a "passive" continental margin: The Ponta Grossa Arch, SE Brazil

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Low-temperature thermochronology was applied at the Brazilian passive continental margin in order to understand and reconstruct the post-rift evolution since the break-up of southwestern Gondwana. Thermochronological data obtained from apatite fission-track analysis of Neoproterozoic metamorphic and Paleozoic to Mesozoic siliciclastic rocks as well as Mesozoic dikes from the Ponta Grossa Arch provided ages between 66.2 (1.3) and 5.9 (0.8) Ma. These data clearly indicate a post-rift reactivation during the Late Cretaceous and Paleogene. Integrating the results of older thermochronological studies, the reactivation of the southeastern Brazilian margin could be described in three main phases. Furthermore, the spatial distribution of age data indicate a NE-age group (NE of Curitiba) of about 20 Ma and a SW-age group (Curitiba and NW) of about 50 Ma. The change of ages follows the NW-SE trending São Jerônimo-Curiúva fault zone that can be traced offshore into the southern end of the Santos basin. Within the Santos basin these lineament terminates the salt occurrence in the south. It seems to play a major role in the structural evolution of the Santos basin and the Rio Grande Rise. Sedimentological studies in the Santos basin evidenced that the transport direction changed in Miocene time. During the Oligocene and earlier the sediments were transported mainly from the direction of the "Curitiba area" into the Santos basin. Within the Miocene an additional transport direction from an area north of Curitiba developed.