
Comparison of Multi-Stage Cooling Histories on Conjugate Rift Margins of the South Atlantic Ocean

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ABSTRACT

Published literature were used to compile apatite fission track cooling ages from the South American rifted conjugate margin in Brazil (total of 498 analyzed rock samples) and from the conjugate rift margin West Africa in Gabon, Angola, Namibia, and South Africa (total of 348 analyzed samples). The comparison of age dates shows a large peak in cooling ranging from the early Cretaceous (130 Ma) to the late Cretaceous (73 Ma) that coincides with the breakup and early passive margin phase of the opening of the South Atlantic Ocean. Along the South American margin, a younger cooling event was recognized during the Miocene (20–15 Ma) that previous workers in Brazil have related to the youngest, Quechuan orogenic phase that led to widening and topographic elevation of the Andes Mountains along the western margin of the South American Plate. A similar, young orogenic phase is not recognized along the west African margin.