

TECTONOPHYSICAL MODELING: AN INTEREST TOOL IN EVALUATING THE GENESIS AND EVOLUTION OF RIFT BASINS AT DIVERGENT CONTINENTAL MARGINS

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The quantitative relation among the first order parameters controlling the basement topography distribution at divergent continental margins could be investigated through the development of a thermo-mechanical model, including the effects of the pre-rift mantle plume, lithospheric rifting, erosion in the rift escarpment and sedimentation in the marginal basin. The regional basement topography of southeast Brazil, including the Brazilian highlands, coastal ranges and the continental margin could be conveniently modeled by this simple integrated tectonophysical model. The modeling was constrained by a number of geophysical data such as: topography/bathymetry, gravity, heat flux and apatite fission track data. In this work we discuss the modeling results, its application to some transects crossing the southeast Brazilian margin and how it might be used as an interesting tool in evaluating the genesis and evolution of rift basins at divergent continental margins.