

Stratigraphic response to tectonic constraints in a Cenozoic intraplate rift – Resende Basin (SE Brazil)

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As result of the integration of geologic, stratigraphic, gravimetric and tectonic data obtained through Project MODESTHI (sponsored by PADCT III/FINEP), a new approach to the sedimentary evolution in response to tectonic mechanisms is proposed. The origin of the Resende basin resulted from the reactivation of Proterozoic faults during early Tertiary, that promoted the development of an ENE-WSW asymmetric basin. It is supposed an initial segmentation of this structure by a N-S structural high, resulting on two main depocenters. In the western side of the basin, alluvial fans were deposited along the active northern border, containing debris derived from the Itatiaia alkaline massif. At the hemigraben axis, a braided fluvial system was oriented eastward. In the oriental part, the main detritic contribution was originated from a wide hydrographic basin flowing to the hemigraben trough from the Serra do Mar reverse, at SSW. These drainage transported sediments derived from a predominantly granitic source-area. The occurrence of an alluvial fan in the northern side of the Morro Redondo alkaline massif suggests the development of faults along the basin's southern border and points to a loss of the basin asymmetry. Later, during a period of relative tectonic quiescence, it was established a low-energy fluvial system mostly found in the eastern half, reflecting distinctive availability to sedimentary accommodation. Transtensional faults affecting the Cenozoic sedimentary succession document the importance of neotectonic mechanisms up to the present.