

THE ROLE OF MESOZOIC CONTINENTAL BASALTS ON THE TECTONIC EVOLUTION OF SOUTHEASTERN BRAZIL DURING CENOZOIC

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The group of intermittent taphrogenic basins discontinuously extending from Rio de Janeiro to Curitiba plays a fundamental role within the general context of the Meso-Cenozoic evolution of South-eastern Brazil. São Paulo Basin (~1,000 sqkm area) occupies the central portion of this group between the inland Paraná Basin and the Santos marginal Basin. At regional scale most of the energy of the topography power spectrum lies on wavelengths over 200 km. Amplitude contours denote the conspicuous NE-SW trend from the Atlantic Plateau to the coast, even at higher frequencies. Filtered higher frequencies (λ 74km) reveal crosswise trends only on the Parana basin area. Locally the NE-SW trends prevail for wavelengths over 22 km; only minor high frequency/low amplitude features develop across basin's axis. Filtered Bouguer anomalies (λ 200 km) reveal some sort of crustal attenuation from the Paraná Basin eastern border to the continental margin. Lower amplitudes residual Bouguer anomalies characterize the rift region due to a minor upper crustal mass deficiency. In this study we propose a flexural model based on the applied force due to the weight of the mesozoic basalts from Paraná and Santos basins. The resulting binary induces upper crust fracturing and faulting at the axis of the rift on the topmost part of the flexural bulge. After this event, the bulge splits along Santos Fault freeing the ascent of the Serra do Mar range. (Funding and support of this work is acknowledged from FAPESP -96/10226-9 and CNPq-141141/94-8)