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## **Brittle Deformation and Neotectonics of the Serra da Cantareira Ridge, Pico do Jaraguá Hill, and Perus Region – Southeastern Brazil**

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Classical geomorphological and geological researches state that the Brazilian landscapes are mostly influenced by the old tectonics (Pre Cenozoic), considering that such region is currently far away from the South America plate border, where seismic activity is higher. On the other hand, recent studies are pointing out present-day tectonic activity in the southeast Brazil thus revealing that Neotectonics, the tectonic regime acting since Neogene, has an important role on the evolution of the Brazilian landforms, including the Continental Rift of Southeastern Brazil, which comprises a set of 900 km length of ENE-WSW tectonic lines and tertiary basins. However, information about Neotectonic activity in the nearby zones of the rift are still missing, such as in the Serra da Cantareira Ridge, Pico do Jaraguá Hill and Perus region, both of them characterized by outcrops of Pre Cambrian igneous and metamorphic rocks. In this way, the objective of this research is to study the brittle deformation of these areas in order to identify possible traces of Neotectonics. This young tectonic was explored through lineament domains, which were automatically detected by SID software and statistically analyzed through Daisy 3 software. In the field, 712 structural data were surveyed in 51 outcrops and cumulated into databases of the Daisy 3 software, in order to identify the main fault azimuthal trends, fault kinematics, and compute the paleostresses. The lineament analysis show the presence of a principal E-W lineament domain, coincident and possibly related to an old (Neoproterozoic), shear zone probably reactivated in the current tectonic regime. The field data indicate the predominance of NW-SE, E-W, and NE-SW strike-slip faults, compatible with the left and right-lateral kinematics of the E-W shear corridor. The computed paleostresses are similar to the Neotectonic stress regime identified in the surrounding areas by other researches: NE-SW compression and NW-SE extension (Neogene); Nearly N-S compression and E-W extension (Holocene). On the other hand, only some of the studied faults present evidence of Neotectonic activity. In fact, most of the surveyed faults are closed or mineral-filled, suggesting they are old or were not recently reactivated. The preliminary results of this work suggest the important role of inherited (Pre-Cambrian) crustal weakens crustal zone probably reactivated in Cenozoic and also in the Neotectonic stress regime. Further detailed studies and field surveys are still necessary to highlight the role of the current Neotectonic regime on the present-day Brazilian landscape as well as to better define the geographic extent and location of the E-W shear corridor.

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