

MAPPING OF THE BASALTIC LAVA FLOWS AND THEIR CORRELATION WITH THE MASS MOVEMENT EVENTS OF SERRA GERAL FORMATION AT PLANALTO SERRANO, SC

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The Serra Geral Formation, component of Paraná-Etendeka Igneous Province, is a thick sequence of lava flows which presents great exposures at Santa Catarina state. In Planalto Serrano area, their exposures are composed by basaltic lava flows and acid effusive. The outcrops are basically located along state and federal highways, being classified as simple or compound *pahoehoe* and *rubbly pahoehoe* flows, based upon their morphology, preserved features and internal zonation. The distinction between the lava flows types is mainly made by the surface features. The simple *pahoehoe* lava flows present upper crust with uniform vesicles, dense core and lower crust with elongated vesicles. Occasionally it is possible to identify small flow lobes, featuring compound *pahoehoe*. Features like vesicles sheets, squeeze-ups and cylinders sheets are also found. Meanwhile, the *rubbly pahoehoe* flows show a usual breccia in the upper crust, dense core and lower crust with elongated vesicles like the *pahoehoe* type. It is well known that lithologic composition of the lava flows and their structural control represent geological features that associated with other geomorphological and climate-hydrological features – besides the anthropic influence –, may ensure instability and the consequent deflagration of mass movements. Therefore, the mapping of the lava flow types in the area and the pointing of the mass movement events recently occurred allows the correlation between the different morphologies of the lava flows and the occurrence of landslides, rock falls and debris flows. From August 2016 to February 2017, profiles were developed along the highways of the entire Planalto Serrano area, with the objective of identifying the types of lava flows and their structural characteristics, as well as visits to points of occurrence of mass movement events. It has been observed that the landslides often occur among the contacts of the lava flows, in spite of their morphology, while the rock falls are mostly associated with irregular fracturing in dense cores. The survey of these data enables the elaboration of a lava flow type map for the region and, through the crossing of this information with digital elevation, altimetric and pluviometric maps available, areas of higher susceptibility to mass movements may be delimited.

KEYWORDS: SERRA GERAL FORMATION, LAVA FLOW TYPES, MASS MOVEMENT