

## **STUDY OF SUSCEPTIBILITY MASS MOVEMENT USING THE GEOPROCESSING TECHNIQUE IN SÓPOLIS TOWN, RIO DE JANEIRO STATE, BRAZIL.**

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This paper presents a susceptibility zoning methodology applied to landslide into Paqueta drainage basin in Teresópolis town. The local concept of landslide risk is closely related to denudation and weathering due to humid tropical climate, steep slopes, soil types, composition of the weathering mantle and landforms. They are accelerated by human action. The environmental inventory is essential data to assess the landslide susceptibility. It generates the following informations: geological and pedological maps, besides a great variety of geomorphological maps (weathering, slope gradient, geomorphic processes, and mass movement). Land use and cover maps are also available. They were constructed using remote sensing and field observation. Landslide zoning is modeled in a GIS using four models: the Boolean logic, the index overlay with multi-class, the fuzzy logic method and the Bayesian methods. Different weights are assigned to each class in the thematic maps and are combined in a series of steps to compile a landslide susceptibility map. Various techniques are combined using GIS in order to characterize, outline and qualify the potential hazard areas.