

Application of the dc Resistivity Method to Landslide Study Case Study: RATESTI Church Area

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Abstract

In the Ratesti (Buzau County), geoelectrical measurements (Vertical Electrical Sounding) were performed for highlighting the sliding area. Measurements of apparent resistivity (ρ_a) were performed for a set of distances AB, keeping constant the distance MN in general and central position measuring device. For each length AB measured electric potential difference between points M and N, created by injecting into the soil through the points A and B of a known electrical current I. To achieve geoelectrical measurements (VES), Resistivimeter IntV3 was used, using the Schlumberger device type. Resistivity IntV3 is a geophysical instrument device for geophysical applications performing soil resistivity measurements under natural conditions of climate and land configuration. Following field measurements results in a series of voltage values ΔV in units μV . The interpretation is usually used a size called apparent resistivity (unit $\Omega \cdot m$) obtained from measurements of land by the formula: $\rho_a = K * \Delta V / I$. If geoelectrical measurements made in the Monastery Ratesti, we adopted a specific methodology landslide research field. The methodology used was imposed by the specific conditions of land, the size of bodies that were to be identified, and the distribution of their surface and depth. Observations obtained from land that we found interesting from the geological point of view is in the range 0-20 m. In the first phase, to highlight the distribution of resistivity with depth and to have a picture on the depth at which lies nearby geological interesting points of view, we have adopted for research geoelectrical profiling method using a device such as AMNB.