RESULTS FROM 2-D ELECTRICAL RESISTIVITY INVERSION ON LANDSLIDES IN BULGARIA: CASE STUDIES USING POLE-DIPOLE ARRAY

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The results of the geoelectrical survey on some dangerous landslides on the territory of Bulgaria are presented. Multielectrodes survey arrey of type pole-dipole has been used for 2-D analyses of the geoelectrical sections. The distance between the electrodes has been chosen according to the expected depth of the slipping plain. This array is useful, both for detecting of sub-vertical inhomogeneities, and for obtaining a detailed information for the subsurface layers behavior. The field works have been done with the system SYSCAL JUNIOR, having automatic microprocessor control of the quality of the measurements. The computer software RES2DINV for 2-D inversion procedure with smoothness-constrained least-squares method has been used. The optimization method basically tries to reduce the difference between the calculated and the measured apparent resistivity values by adjusting the resistivities of the model of rectangular blocks. Although the geological conditions are different for each case, the landslide plains show similar structures on the geo-electrical sections. Often the slipping bodies are composed by several heterogeneous blocks like slipping plains.