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電気探査による重力性変形地形の破断面可視化の試み
Subsurface fracture of sackung features quantified with electrical resistivity tomography

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Deep landslides often occur in mountain slopes which have sackung features resulting from deep-seated gravitational slope deformation. This study addressed the visualization of the internal structure below sackung features using electrical resistivity tomography, to evaluate development of shear zones below sackung features. From August to October 2012, two-dimensional DC resistivity surveys were performed on 12 sackung features consisting of sedimentary rocks which were located above 2600 m a.s.l. in the Japanese Alps (Mt. Chogatake, Mt. Ainodake, Mt. Senmaidake, Mt. Kamikouchi and Hyakkendaira). The setting of the electrodes followed the Wenner array, which was a 46.5 m long profile roughly perpendicular to the focused sackung feature in each line. Computed DC resistivity value ranged from 1 kohmm to 128 kohmm. Some sackung features had a subsurface layer of relatively low resistivity probably resulting from fractured and weathered rock mass. These layers were distributed at the position of shear zones inferred from the geological structure and topographical feature. Such a consistency suggests that the layers of lower resistivity correspond with the shear zones below sackung features. In contrast, the tomographical images of the other sackung features showed no distinct difference in resistivity following the feature. Difference in resistivity between sackung features is supposed to reflect development of shear zones.

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