## The resistivity distribution under the ground on bedrock creep slopes in Kii mountain area by the airborne electromagnetic survey

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In typhoon Talas of September 2011, numerous deep-seated landslides were occurred in the Kii Peninsula. In order to reduce the damage, it is necessary to grasp the dangerous slopes for landslides in advance. For the method to extract the dangerous slopes, there are a method using topography data such as the laser profiler, a method to judge from geology / topography, a method to judge from the amount of spring water at the end of slope and the quality of water. These methods have advantages and disadvantages, and there are insufficient aspects to estimate the degree of the danger and the scale of the dangerous slopes. Therefore, in order to complement these methods, we propose the method to estimate the risk and the landslide size based on the resistivity distribution of the ground obtained by the airborne electromagnetic survey. In this study, two bedrock creep slopes in the Akadani-west area were considered as the research fields and the validity of the estimation method was verified.

In this study, the vertical resistivity distributions of the slopes were created from the airborne electromagnetic survey obtained in the past. First, we calculated the average penetration depth from the frequency and the specific resistance of the ground. Next, the blank portion where data was not obtained was supplemented. Final, the smoothing processing was performed for the purpose of eliminating the noise. The vertical resistivity distribution of the ground is displayed in color, so it is easier to judge the danger level and estimate the slip surface. For this reason, we adopted the method of separating colors according to the frequency from all resistivity values obtained in the Akadani-west area.

In the slopes of the Akadani-west area, we have found that the resistivity value steeply changed in the vertical direction at the slip surface. For this reason, the degree of the landslide risk and the depth of the slip surface can be estimated from the resistivity distribution. In addition, we have found that the depth of the slip surface can be estimated in more detail by first differentiating the resistivity value in the vertical direction.

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