Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

STT55-P07 Room:Convention Hall Time:May 22 18:15-19:30

The airborne electromagnetic survey to the slope with high risk of deep catastrophic landslide in the Himekawa basin

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Including the collapse of Hiedayama, Himekawa basin has caused a number of deep catastrophic landslides in the past, and many landslides and large-scale collapse scars are distributed. Investigated based on the manual ”Extraction method of Mountain Stream trending to cause deep catastrophic landslide”, in the Ministry of Land, Infrastructure, Transport and Tourism, we announced the results of the evaluation level mountain stream. Relatively high risk streams are extracted in the Himekawa basin.

The technique evaluated from stereoscopic examination of aerial photographs or digital elevation models, and the evaluation technique using LiDAR data and etc. are studied to extraction of the slope with risk of deep catastrophic landslide. In order to acquire subsurface structure broadly and to acquire the information on the depth direction of deep collapse, the evaluation technique which used the airborne electromagnetic survey is effective.

In this research, airborne electromagnetic survey was performed as a target in the Urakawa up-stream basin and Otokorogawa middle-stream basin especially with high risk of deep catastrophic landslide among Himekawa valleys. We have carried out an understanding of three-dimensional resistivity distribution. Then, the drilling survey and borehole test were done to a certain specific slope, and it verified about the extraction technique of layer thickness with risk of depths collapse by comparing with the specific resistance distribution map by an airborne electromagnetic survey result.

Keywords: deep catastrophic landslide, airborne electromagnetic survey, resistibility, microtopography, saturation