

世界26カ国 約500名の砂防技術者等に調査研究成果を発信！ 国際シンポジウム インターフリベント2018富山

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平成30年10月1日(月)から4日(木)の4日間、富山国際会議場において、「国際シンポジウム インターフリベント2018富山」(国際防災学会富山大会)が開催され、紀伊山系砂防事務所および大規模土砂災害対策技術センターの職員が日頃の取り組み成果を発表しました。インターフリベントには、世界26の国と地域から492人が参加しており、H23紀伊半島大水害に関する様々な取り組みを国内外に広く紹介する機会となりました。

会場内の様子(富山県HPより引用)

大規模土砂災害対策技術センター職員による成果発表の様子



深層崩壊発生メカニズムに関する研究成果説明パネル

大規模土砂災害対策工事の進捗状況説明用パネル

III-19 Development of Extraction Technology for Potential Slopes for Deep-seated Landslides, Focusing on Subsurface Resistivity Tomography Obtained by Airborne Electromagnetic Survey
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1. Introduction
They are proposed to extract potential slope for deep-seated landslide. Extracting micro topographic feature / analyze spring water from slope etc. Recently, airborne electromagnetic survey is proposed as a method to estimate bedrock condition. In this study we conducted boring survey, and discussed the method to extract the potential slopes of deep-seated landslide with electromagnetic survey.

2. Research area and method

3. Analysis for resistivity and boring survey

Relative change of the apparent resistivity are believed to be affected by the moisture content, clay mineral content. On the basis of the apparent resistivity, the low resistivity zone sandwiched by high resistivity zones may indicate clay-rich layers and the distribution of mudstone and buff layers. The center of the low resistivity zone is observed at a depth of around 50 m from the ground surface.

According to the boring core samples, pelitic rocks, which contain bituminous shale and are sandwiched by sandstone layers, are distributed at a depth of around 50 m. X-ray diffraction found a formation of smectite near the center of the low resistivity zone.

The resistivity analysis and the boring survey indicate the low resistivity zone sandwiched by high resistivity zones may represent loading zone.

4. Apply to Kii mountain area

We investigated 74 slopes where we can research on site.

- The pattern of resistivity
 - ① high - low - high (We call them A type)
 - ② low resistivity spreading widely (We call them B type)
 - ③ initial type of ① and ②

The pattern of deep-seated landslides by typhoon 12 in 2011 have ① and ②.

Although the filter of differential is useful to extract the changing area for resistivity, it isn't for low resistivity spreading widely.

5. Conclusion

- The high resistivity area which is sandwiched by low resistivity indicates loose area.
- We can extract the change area of resistivity with the filter of differential.
- We can find the slopes which have similar characteristics of bedrock condition to deep-seated landslide by typhoon 12 in 2011 with electromagnetic survey.

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