

白山山系の背梁を形づくる巨大屋根の超大規模スベリ・崩壊の3次元岩・水連成安定解析

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3-D stability analysis of colossal collapse of Mt.Hakusan

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Research Field

Geotechnical engineering

Research Institution

Kanazawa University

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Research Abstract

The bodies of mountains are made of rocks which contain a number of cracks with thin layers of clay. Many of the mountain collapses are triggered by the increase in the water pressure acting on such planes of separation in the rock mass. In order to analyze the mountain collapse, it is needed a computer program which deals with a three dimensional configuration of the rock mass containing a number of planes of separation. In this research project, we have developed a computer program designed for this purpose and apply the program to analyze the colossal collapse of Mt.Hakusan (The White Mountain, 2703m). For a purpose of calibration, many cases of mountain collapse mainly experienced in Noto area where rock materials are

extremely weak are analyzed by the developed program. The results of these trial analyzes are basically satisfactory. One of the input data needed in the analysis is the strength of the thin clay material resting in the gap of the planes of separation. We have successfully taken undisturbed samples of thin clay and tested them in a shear box under conditions of constant volume. How to take the samples and how to test them are also the useful harvest of this research project.

Research Products (9 results)

All Other

All Publications (9 results)

- [Publications] 太田秀樹 他3名: "切取軟岩のり面の長期挙動" 土木学会論文集. III-22. 15-24 (1993) ▼

- [Publications] 大森晃治・太田秀樹: "山岳崩壊の予測-大自然の驚異・巨大な力のバランスを解析する-" 土木学会誌. No.12. 17-19 (1994) ▼

- [Publications] 太田秀樹 他4名: "一面せん断の力学的意義と結果の解釈" 直接型せん断試験の方法と適用に関するシンポジウム発表論文集. 147-154 (1995) ▼

- [Publications] 太田秀樹 他3名: "討議・回答" 土木学会論文集. III-31. 211-215 (1995) ▼

- [Publications] Hideki OHTA.etc: "Case Study of a Colossal Rocks Mass Slide Olong Discontinuity Surface." 投稿中. (1996) ▼

- [Publications] S.Kaneko, Y.Tasaka, H.Ohta, A.Iizuka.: "Evaluation of the Initial Stress State in Soft Clay Considering the Fluctuation of Underground Pressure Head -2 : Determination of Parameters" the 28th japan national conference on soil mechanics and foundation engineering. 1463-1466 ▼

- [Publications] S.Kaneko, Y.Tasaka, H.Ohta, A.Iizuka.: "Evaluation of the Initial Stress State in Soft Clay Considering the Fluctuation of Underground Pressure Head -2 : Determination of FEM Analysis." the 28th japan national conference on soil mechanics and foundation engineering. 1467-1470 ▼

- [Publications] T.Takahashi, H.Ohta, T.Matsumoto, Y.Morikawa, F.Nakahara.: "Time-dependency characteristics of in-situ deposited sand." the 29th japan national conference on soil mechanics and foundation engineering. 385-388 ▼

- [Publications] F.Nakahara, H.Ohta, T.Matsumoto: "Stress history dependency of in-situ deposited sedimentary sand." the 29th japan national conference on soil mechanics and foundation engineering. 427-430 ▼

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