

Summary of the Main Paper

A Study on Development of Judgment and Support System Based on Nailing Sensor for Reduce Slope Disaster

だんじょう とおる
Name Danjo Toru

Summary of the Main Paper

Today, the evacuation signal systems for surface failure are developed signals are announced according to the rainfall index during rainfall. These systems are useful though still have weaknesses in accuracy. Understanding the rainfall intensity, infiltration, and deformation characteristic of the ground would contribute to the improvement of this system.

Purpose of my research is to suggest a new displacement sensor which is called the nailing sensor, and it aims to develop judgment and support system for reduce slope disaster by measuring deformation behavior in the ground in real time. An ingenious point of my research is to suggest the system with fusion technology which are monitoring and reinforcement method on slope.

In chapter 1, the background and purpose of the dissertation, the review of previous researches are stated. And, the composition of the dissertation is clarified.

In chapter 2, the experiments using the two kinds of model slopes are conducted, and the relationship between slope failure and infiltration or deformation during rainfall are explained. Moreover, measurement items are clarified in order to predict a time of slope failure.

In chapter 3, based on the results of chapter 2, author suggests the new sensor called the nailing sensor, and the feasibility and the effect of its installing are validated by experiment.

In chapter 4, the experiments using two kinds of slopes are conducted for development of slope monitoring system using the nailing sensor, and suitability of the sensor for getting the effect of its installing is evaluated.

In chapter 5, the nailing sensor is measured over a prolonged on site to find the effects and agendas for the sensor to be in use.

In chapter 6, the results obtained from this dissertation are totally summarized and future subjects to be solved are described.