EGU2020-18893, updated on 08 Aug 2020
https://doi.org/10.5194/egusphere-egu2020-18893
EGU General Assembly 2020

A Study on Parameters of Rainfall Runoff Model and The Prediction Method of Landslide Disaster in Mountainous Area

Huimyeong yoo, Naoki koyama, and Tadashi yamada
Chuo-university, Faculty of Engineering, civil engineering, Japan (yuhi1025@naver.com)

This study is to analyze the evacuation behavior of residents living in the mountainous area and predict landslide disasters during heavy rain. 70% of Japan has are mountainous areas, and landslide disasters have occurred due to heavy rains caused by typhoons and heavy rainfall, etc. the annual average amount of damage caused by landslide disasters is 1000 in recent years. Also, landslide disaster warning information and evacuation information are important, it is difficult to predict landslide disasters, however, if we issued the evacuation advisory when the disasters already happened, there will be not enough time for the evacuation. In order to protect residents from such disasters, it is important to clarify "what information is effective for evacuation" and "when should those information be released?" Therefore, we conducted a survey on the residents in the mountainous areas which suffered from the heavy rain disaster in 2017 and analyzed the answers.

As a result, some residents evacuated before the evacuation information was issued. Because some landslide disasters occurred even before the first evacuation information was transmitted, and they felt danger. This result shows that the early information based on the prediction of the disasters is important in mountainous areas.

Therefore, we suggested a method for predicting landslide disasters, the method uses a rainfall and runoff tank model with high reproducibility and robustness of geological characteristics and uses the cumulative rainfall at the time of disaster occurrence as an index. As a result, this model predicted the occurrence of the landslide disaster 3 hours earlier by using forecasted rainfall. it is an effective method.

How to cite: yoo, H., koyama, N., and yamada, T.: A Study on Parameters of Rainfall Runoff Model and The Prediction Method of Landslide Disaster in Mountainous Area, EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020-18893, https://doi.org/10.5194/egusphere-egu2020-18893, 2020