

HDS05-03

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極端な豪雨による山岳道路斜面安定の影響 Extreme Rainfall Effect on Slope Hazards along Mountain Roadway

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Due to the global climate changes, the scale and frequency of natural disasters are more difficult to predict and measure. Extreme rainfall often brings astonishing amount of water and causes very serious damage in the mountain areas. And for different environment conditions, the slope hazards induced by rainfall would be different like geology, topography or location. Therefore in this research, the authors considered the elevations, slope aspect, slope gradient and geology to compare and analysis the rainfall effect on slope hazards by using the historic landslides records. And the major method of rainfall analysis is the snake line model that is using dual-indexes of rainfall- short term rainfall intensities and accumulated rainfall data. Short term rainfall intensities mean hourly rainfall, 3 hourly rolling rainfall, 6 hourly rainfall and so on. The most important of these rainfall analyses are trying to find some regulars in occurrence of slope hazards. Furthermore, the authors also collected different hazard types in order to try to get the rainfall characteristics of different disasters. In this research, the authors used the Da-Jia River upstream region (Taiwan) as the case study. In this region, over than half area the slope gradient is larger than 55%. Through the results of the analyses, the authors get some important conclusions. Firstly, in the environment conditions, the effects of slope gradient, elevation, and geology are obvious. Secondly, the effect of slope aspect is according to the rainfall events. Finally, in extreme rainfall events, the trend of occurrence time in different hazards can be observed. According to the above conclusions, it can be effective to make decisions to prevent disasters and reduce lost.

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