عنوان مقاله:

Temporal and Spatial Prediction of Rainfall-Induced Landslides using the Specialized TRIGPS Model

محل انتشار:

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خلاصه مقاله:

Landslides as natural phenomenon occur every year in many parts of the world, especially in hilly areas, andpose considerable life and property losses. Given the temperate and humid climate in northern Iran, most landslides occurred in this area are triggered due to rain. In this study, in order to predict the time and location of shallow landslides caused by rainfall, TRIGRS model was applied in Nekarood area in the Alborz mountain range in northern Iran and its sensitivity to a number of effective parameters in the landslide was assessed. After preparation of all required parameters, TRIGRS model wasimplemented to predict alandslide within the study area induced by a rainfall intensity of ۱.۲۷ mm/h lasting for ۲۴ hours. The results showed that the model predicted landslides accurately. Also, the effect of rainfall duration on increasing the number of unstable cells isalso evident. In this regard, within the first hour, ۰.۱۹% of cells indicate a safety factor (FS) less than ۱ while after ۲۴ hoursit reaches ۴.۰۸%. To evaluate the model sensitivity to initial ground water level, some adjustments were made in the water table level. The result showed that, unlike the changes in precipitation, modelresponse to watertablefluctuation is not significant.

کلمات کلیدی:

Temporal and Spatial Prediction, Landslide Prediction, TRIGPS, Nekarood