

**Stability Analysis of Slope Surface Layers Extending over a Wide Area under Rainfall Condition  
in Consideration of the Dependence of the Soil Cohesion on the Degree of the Soil Saturation**

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In order to secure the train operation, it is necessary to identify beforehand the area where the danger of the failure of slope surface layers along railway lines is high during the rainfall. The change of the water level of the surface layer during the rainfall has a great influence on the failure. We have developed a method of predicting the change of the water level and evaluating the stability of the slope surface layer considering the topography. In order to improve the accuracy of this method, we introduced to the analysis the relation between the decrease of the soil cohesion and the increase of the degree of the soil saturation. In this paper, we describe this method, and an analysis example using this method.