



Influence of rainfall and evaporation on suction and Slope Stability

By Haruna Yunusa, Gambo / Gofar, Nurly

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Effects of Rainfall Infiltration and Evaporation on Soil Suction and Slope Stability | Rainfall infiltration is one of the major factors that lead to slope instability in unsaturated soil. The infiltration leads to the decrease of suction and hence causes the reduction in shear strength of the soil. On the other hand, evaporation dries the soil mass which invariably increases suction resulting in increasing the shear strength of the soil and the factor of safety of the slope. This book presents the results of a study on the combined effect of these two processes on suction distribution and the slope stability. Analysis was carried out using 1-year data representing a site at Johor Bahru, Malaysia. Soil samples were collected and relevant data, that is, soil water characteristics curve (SWCC), hydraulic conductivity curve, and shear strength parameters were gained through interpretation of laboratory test results. Transient seepage analyses were carried out using commercial finite element software (SEEP/W). Residual water content was assigned at the beginning of all analyses. The pore-water pressure distributions obtained from these analyses were transported to SLOPE/W where the factor of safety of the slope for the afore mentioned cases were...



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