



In-situ Experimental Study on the Shear Strength of Slip Soils

Xuyao Liu, Echuan Yan, and Shaoping Huang

Faculty of Engineering, China University of Geosciences, Wuhan, 430074, China [U+FF08]372415835@qq.com [U+FF09]

The deformation and failure of most gravelly soil landslides are closely related to the slip soils inside the landslides. The slip soils are a special kind of soil-rock mass forming inside the landslide. Its physical and mechanical properties, especially the shear strength characteristics are related to the whole process of the landslide include occurrence, development and destroy process and also have decisive influences on the stability of landslides.

Due to restriction of its precision, operating convenience and equipment structure, the traditional equipment is no longer able to meet the requirements of the field test, therefore we redesigned and manufactured a set of new large-scale in-situ direct shear test equipment and applied it into the field test successfully, completed the shear test in different shear rates, got the peak strength and residual strength respectively. Then we analyzed the changing characteristics of slip soils' stress-strain curve, revealed the dynamic response property of the slip soils' shear strength when the shear rate changes. The internal friction angle φ has a logarithmic relationship with shear rate ν . The strength parameter φ decreases while ν increases.