

# 正常壓密態動摩擦角的探討

章致一, 吳淵洵, 李明書

土木與工程資訊學系

工學院

jasonwu@chu.edu.tw

## 摘要

This paper assumes that the shear stress of the interparticle friction equals to interparticle kinetic friction on a shear plane of a soil. Laboratory experiments were conducted based on the friction law of physics, the kinetic friction angle of two solid objects will be the unique characteristic of these objects as long as there are no external interferences or internal mass changes in the system. Statistical concept of experiment design were applied and 40 sets of direct shear tests were conducted to observe the kinetic friction angle for Taipei clay, Taipei fine sand, and standard sand (ASTM D-1556). All tests were conducted under four conditions: 1. no interparticle apparent cohesion; 2. normal consolidated conditions; 3. equal shearing strain; 4. no interparticle excess pore pressure. Based on the test results, the observed values of kinetic friction angle are normally distributed. It can be inferred that without the effects of other stresses, a friction angle within a reasonable sampling deviation can be obtained for all normally consolidated dry particulate soils.

**關鍵字** : Normal consolidated condition, Kinetic friction angle, Friction shear stress, Kinetic friction, Normal distribution.