

Determination of the post-cyclic yield strength and initial stiffness of two peat soils

ABSTRACT

The post-cyclic yield shear strength and initial stiffness of a peat soil after subjecting to cyclic loading is a major topic in this study. Due to the effects of cyclic loading, post-cyclic shear strength decreases lower than its initial strength. A series laboratory static and cyclic triaxial test followed by post-cyclic monotonic tests carried out to determine the yielding parameters. Tests were carried out on the undisturbed samples taken from Parit Nipah, Johor and Lumadan, Sabah within west and east Malaysia peat soils. Post-cyclic loading test conducted with effective stress 100 kPa with frequency 1.0Hz. The initial stiffness is the initial tangential modulus with yield shear strength was half of the deviator stress in which two tangential lines intersect. The post cyclic yield shear strength of undisturbed peat soil is considerably lower compared to static at the axial strain of only 1.4% and 1.5%. The Parit Nipah and Lumadan peat are classified as Hemic.