

Effect of cyclic loading on post-cyclic behaviour of Parit Nipah peat soil

ABSTRACT

The post-cyclic behaviour of a peat soil after subjecting to cyclic loading is a major topic in this study and interdisciplinary structured. A series laboratory monotonic and cyclic triaxial test followed by post-cyclic monotonic tests carried out to determine the effect of soil behavior when subjected to cyclic loading. Tests were carried out on the undisturbed samples taken from Parit Nipah, Batu Pahat, Malaysia. The cyclic triaxial tests were performed on consolidated undrained specimens with 50mm diameter by 100mm height consequently subsequently followed by monotonic loading. A dynamic triaxial testing system was used to investigate the undrained shear resistance of undisturbed soil samples and tests were performed under different cyclic effective stress ratios from 50 and 100 kPa with various amplitudes from 0.5, 1.0 1.5 and 2.0Hz. Monotonic tests were conducted on soil specimens by controlling the strain rate in order to determine the pre-cyclic and post-cyclic shear strength. The index properties of peat with 650% moisture content and fibre content consist of 27.17% and indicate that Penor peat is classified as Hemic.