

FINITE ELEMENT SIMULATION OF RETROGRESSIVE FAILURE OF SUBMARINE SLOPES

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Abstract

To simulate earthquake-induced, retrogressive submarine slope failures, element removal capabilities of a finite element program are used to model a soil mass that fails and then flows away, causing upper parts of slope to fail retrogressively due to loss of support. It is explained how an initial failure leads to subsequent failures of a flat or gently sloping seafloor. Effects of a silt layer and gently sloping seafloor on the extension of retrogression in a sand deposit are studied. The extension of failure increases significantly for a gently sloping seafloor with the presence of a silt layer.

J. Locat, J. Mienert (eds), 2003, *Submarine Mass Movements and their Consequences 1st International Symposium*, Kluwer Academic Publishers, 11-20.