

A numerical study of a bounding surface model for submarine landslides

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Finite element analyses of landslides usually rely on the use of an elastoplastic constitutive model, such as the Mohr-Coulomb model, which may not well describe the softening behavior of geomaterials under loading. Specifically, for submarine landslides that occur in clay layers, the softening behavior should be taken care to achieve a more realistic result. In this study, a bounding surface plasticity model, capable of describing strain softening and clay behaviors, is tested using a commercially-available finite element software, ABAQUS. Validation of the model is conducted against a series of triaxial data exhibiting softening behavior. In addition to the validation, capabilities of the model for describing landsliding are also assessed and presented herein.

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