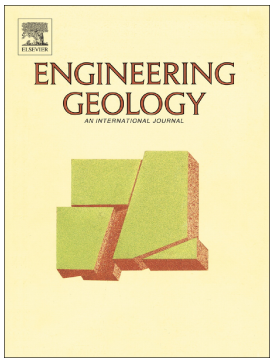


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# The Mechanics of a Saturated Silty Loess and Implications for Landslides

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**Abstract**

The results from an intensive experimental investigation on a loess that was retrieved from a typical silty loess zone in the north-western Chinese Loess Plateau are presented and interpreted. Triaxial and oedometer tests were performed on intact and reconstituted samples in a saturated condition. The soil behavior was found to be strongly affected by structure. The compression paths of the intact samples crossed the intrinsic compression line of the reconstituted soil and reached well-defined gross yield points, after which the compression paths converged towards the intrinsic compression lines. Two critical state lines were defined for the intact and reconstituted soils in the volumetric plane as a result of a robust element of natural structure. Comparisons were made with a structured clayey loess retrieved from the south-eastern Loess Plateau. It was found that the effects of structure on the behavior of the two loess soils are similar though they are very different in natural properties. This indicates that their natural structures might have experienced similar forming