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Comparison for structural behavior of Q_2 loess in different regions

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Abstract: Q_2 loess in Xi'an area and Yan'an area are studied by the uniaxial compression test and the CU shear test, results show that the structural yield strains are all smaller, and do not change significantly with the water content, structural yield stresses are decreasing exponentially with water contents increasing in the former test. Structural behavior is influenced obviously by water content and confining pressure in the latter test, structural yield strains and yield pressures of loess in two regions all increase with the confining pressure increasing, but the structural yield pressures decrease with water contents increasing. Stress-strain curves in structural yield phase change from strong strain-soften type to weaker and even weak strain-soften type with higher confining pressure and higher water content. Because of different sedimentary environments, structural yield pressure of Q_2 Loess in Xi'an is higher when the water content is lower, but lower when the water content is higher.

Key words: loess; structural behavior; water content; confining pressure

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