

**Geotechnical problems under low confining stress conditions**

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**Abstract:** Geotechnical problems under low confining pressure conditions were summarized, including the future development of lunar resources, deformation and stability of geotechnical structures in shallow soil, liquefaction of foundation soils, interpretation and application of laboratory and in-situ tests. In previous study, attention was paid only to the properties of soil-rock materials under high confining stress, and in applications the parameters of soil-rock materials under low confining stress were assigned in the same way as under medium to high confining stress; while the reliability of this parameter selection method was disputable, because the properties of soil-rock materials are seriously dependent on the stress. Therefore, recommendations for studying on the static and dynamic engineering properties of soil-rock materials and establishing constitutive models applicable to soils-rock materials under low confining stress were made to provide scientific basis for design criteria selection of the soil-rock materials and corresponding parameters selection method in numerical simulation

**Key words:** low confining stress; geotechnical engineering problems; engineering properties of soil-rock materials