

岩土材料细观结构定量化表述方法研究——以土石混合体为例

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STUDY OF QUANTITATIVE DESCRIPTION METHODS OF GEOMATERIAL MESO-STRUCTURE— TAKING SOIL ROCK MIXTURE FOR EXAMPLE

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摘要

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摘要 自然界中的岩土体在细观层次上呈现明显的结构性特征, 这种结构性一方面反映了其成因机制, 另一方面也影响着其自身工程地质力学性质及在外荷载作用下的变形破坏特征。对岩土体细观结构定量化描述方法进行系统地论述, 并以土石混合体为例对其细观结构特征进行系统研究, 发现其细观结构在统计层次上具有很好的自组织特征。在此基础上, 提出土石混合体细观结构定量指标体系, 这对于深化土石混合体理论体系的研究具有指导的意义。

关键词: 土力学 土石混合体 岩土材料 细观结构 定量表述

Abstract: Geomaterials in nature have obviously structural characteristics in meso-level, which makes the engineering geological and mechanical properties are more complex than general homogeneous materials. This kind of structural characteristics, on the one hand may reflect the forming mechanism of geomaterials, and on the other hand may also effect the engineering geomechanics of geomaterials and their deformations and failure mechanisms under loading. The quantitative description methods of geomaterial meso-structure are discussed systematically. Taking the soil rock mixture(SRM) as an example, its meso-structure characteristics are studied systematically; and we found that there is very well self-organizing feature of the meso-structure of SRM in statistics level. Based on the studies, the index system used for the quantitative description of the SRM meso-structure is provided, and it is very important to the theoretical study of SRM.

Keywords: soil mechanics soil rock mixture(SRM) geomaterial meso-structure quantitative description

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