

堆石料的强度与变形特性及临界状态研究

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Strength and deformation characteristics and critical state of rock fill

摘要

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摘要 通过一系列大型三轴压缩试验, 研究了不同初始应力状态与试样密度对堆石料强度和变形行为的影响以及堆石料的临界状态。试验结果表明: 堆石料在剪切过程中应变软化与否和剪胀性取决于该堆石料本身密度和所施加的围压; 且在应变足够大时, 土样出现临界状态, 临界状态与试样的初始条件无关, 剪切时, 堆石料的颗粒破碎效应明显, 其临界状态线在平面呈现出非线性特点。

关键词: 堆石料 变形特性 临界状态 剪胀性

Abstract: Through a series of large triaxial compression tests, the strength and deformation characteristics as well as the critical state of rock fill are investigated. The test results show that subjected to shear, rock fill samples under some state will exhibit shearing dilatation and strain softening behaviors, and that whether they will happen or not depends on its current state, which is characterized by both its density and effective mean normal stress applied. Under large strain levels, the critical state will appear in all the soil samples tested, and the critical state is independent of its initial state. In the plane, the critical state line of rock fill shows nonlinear characteristics.

Keywords: rock fill deformation characteristic critical state dilatancy

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