

基于离散元方法的桩基变形研究与思考

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摘要: 本文以离散元方法为工具,研究其在滑坡桩基设计中的应用,以此为例,通过模拟滑坡过程中土体颗粒的相互作用,说明了离散元方法提供了一种全面而精细的数值分析手段,可以较好地用于评估滑坡桩基的稳定性和抗滑性能。总结了现阶段离散元方法应用在岩土工程领域存在的问题和不足,并进一步提出合理可行的解决方法。若能规避缺陷,优化计算,离散元将会应用更加广泛,计算会更加高效。

关键词: 离散元; 边坡变形; 桩基受力分析; 数值模拟。

Abstract: This paper uses the discrete element method as a tool to study its application in the design of landslide pile foundation. By simulating the interaction of soil particles in the landslide process, it is demonstrated that the discrete element method provides a comprehensive and precise numerical analysis method, which can be used to evaluate the stability and anti-sliding performance of landslide pile foundation. This paper summarizes the existing problems and shortcomings of the application of discrete element method in the field of geotechnical engineering at present, and further puts forward reasonable and feasible solutions. If the defects can be avoided and the calculation can be optimized, the discrete element will be more widely used and the calculation will be more efficient.

Key words: discrete element; Slope deformation; Force analysis of pile foundation; Numerical simulation.