

预应力锚索加固技术的力学行为与群锚效应分析

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摘要 预应力锚固技术是现代岩土工程加固技术的重要手段。通过对锚索、灌注锚固体和锚孔周围岩土体进行三维弹塑性有限元分析, 研究了锚索、锚固体、岩体的轴向应力分布规律, 以及锚固体与岩体中的剪应力、锚固体的位移和塑性区的变化趋势; 并对群锚效应下锚固体的位移、正应力、剪应力的影响范围进行了分析, 探讨了考虑群锚效应下锚索间距的布置原则, 为在锚固工程中合理施锚和优化布锚提供了依据。

关键词 [岩土力学; 锚索; 岩土锚固体; 群锚效应; 锚索间距](#)

分类号

ANALYSIS OF MECHANICAL BEHAVIOURS AND EFFECTS OF PRESTRESSED ANCHORAGE

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Abstract

Prestressed anchorage technique is an important method to reinforce high rock slope. Based on the numerical simulation analysis by using 3D finite element method, not only the mechanical characteristics of tendon force, shear stress and displacement among anchor cables and grouted body and rock mass but also the anchorage effectiveness are studied. In addition, the regularity of cables pitch is discussed. It is concluded that the structural properties of rock mass is the main factor affecting anchorage stress distribution. The suggested method could be widely used for practical engineering.

Key words [rock and soil mechanics; anchor cable; anchorage grouted body; anchorage effectiveness; cables pitch](#)

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