

三维激光扫描技术在高陡边坡地质调查中的应用

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摘要 三维激光扫描技术的产生是测绘领域继GPS技术之后的又一次技术革命, 可以广泛应用于工程建设与物体三维测量相关的众多领域, 具有高效率、高精度的独特优势。目前, 该项技术的应用在国外尚处于起步阶段, 国内应用还颇为鲜见, 尤其是在地质和岩土工程领域。在对该项技术的总体情况进行简单介绍的基础上, 结合工程实例, 阐述应用该项技术解决高陡边坡调查中, 关于边坡快速编录和岩体结构面参数测量的原理与方法, 由此可以看出该项技术在地质和岩土工程领域的应用前景和价值。

关键词 [工程地质](#); [三维激光扫描](#); [高陡边坡](#); [岩体结构](#); [快速编录](#)

分类号

APPLICATION OF 3D LASER SCANNING TECHNOLOGY TO GEOLOGIC SURVEY OF HIGH AND STEEP SLOPE

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Abstract

After application of global position system—GPS technology, appearance of 3D laser scanning technology is an important technological revolution in surveying and mapping field. It can be widely used in many fields including survey of engineering constructions and interrelated 3D measurements, and has unique characteristics of the high efficiency and high degree of accuracy. At present this technique is still under the initial stage in other countries, and is also quite rarely used home, especially in geotechnical engineering and geological engineering. On the basis of simple and overall introduction of 3D laser scanning technology, the paper studies how to apply the technology to high and steep slope investigations according to a case study; and principles and methods of slope quick logging and rock mass structural plane parameters measurement are discussed and analyzed. Therefore the conclusion can be draw from the analysis that application of 3D laser scanning technology to geotechnical engineering and geology has a great prospect and value.

Key words [engineering geology](#); [3D laser scanning](#); [high and steep slope](#); [rock mass structure](#); [quick logging](#)

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