

基于数码摄影技术的岩体裂隙测量方法初探

范留明, 李 宁

(西安理工大学 岩土工程研究所, 陕西 西安 710048)

收稿日期 2003-10-4 修回日期 2003-12-6 网络版发布日期 2007-2-7 接受日期 2003-10-4

摘要 基于数码摄影技术的岩体裂隙测量法, 是一种与传统测量完全不同的新方法, 可以高效率地测量岩体裂隙。基于数字图像处理理论, 针对裂隙图像的特点, 对这一新方法进行了比较全面地探索, 提出了裂隙图像的现场采集方法及其解译路线, 重点研究了智能识别方法, 并研发了相应的处理软件。按照上述解译路线, 应用自编裂隙图像处理软件, 对从野外实拍的典型数字裂隙图像进行了试算、分析和总结, 初步证明了此解译路线的可行性。

关键词 [岩石力学](#); [岩体裂隙](#); [裂隙图像](#); [图像解译](#); [智能识别](#); [形状解析](#); [数码摄影测量法](#)

分类号

STUDY ON ROCK MASS JOINT MEASUREMENT BASED ON DIGITAL PHOTOGRAMMETRY

FAN Liu-ming, LI Ning

(Xian University of Technology, Xi'an 710048, China)

Abstract

Rock mass joints, a typical sort of structural planes, are widely distributed in the rock mass. So the measurement and investigation on rock mass joints are the foundation for rock mass classification and the determination of physical and mechanical parameters. However, the traditional in-situ investigation using manual measuring tools is inefficient and costly. The digital photogrammetry is applied into rock mass joint measurement to overcome these disadvantages in this paper. Based on principles of digital image processing and the characteristics of images of rock mass joints, an interpretation scheme for images of rock mass joints based on digital photogrammetry is put forward, which includes geometrical transform, image enhancement, intelligent recognition and shape analysis. Of these procedures, the intelligent recognition for rock mass joints is discussed in detail. The feasibility of the interpretation scheme is proved in a typical case of digital image processing of rock mass joints.

Key words [rock mechanics](#); [rock mass](#)

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(128KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含](#)
“[岩石力学](#); [岩体裂隙](#); [裂隙图像](#); [图像解译](#); [智能识别](#); [形状解析](#); [数码摄影测量法](#)”
的 [相关文章](#)
- ▶ [本文作者相关文章](#)
- [范留明](#)
- [李 宁](#)

[joint](#); [image of rock mass joint](#); [image interpretation](#); [intelligent interpretation](#); [shape analysis](#); [digital photogrammetry](#)

DOI:

通讯作者