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公路隧道衬砌质量检测中电磁波无损检测方法的应用研究

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摘要 结合在隧道衬砌质量检测工程实践中应用地质雷达(GPR)的实际情况，阐述电磁波无损检测技术的原理，详细介绍在隧道衬砌质量检测中使用地质雷达进行电磁波无损检测的方法和对隧道衬砌质量、病害的判断识别技术，包括衬砌厚度、衬砌内部缺陷、钢筋分布情况等的探测结果实例和波形图像特征以及施工反馈和工程实践中遇到的问题，最后给出相关结论建议。

关键词 道路工程；电磁波；无损检测；地质雷达；衬砌

分类号

APPLICATION STUDY ON NONDESTRUCTIVE DETECTION METHOD OF ELECTROMAGNETIC WAVE IN ROAD TUNNEL LINING QUALITY DETECTION

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Abstract

Combining with practical situation of ground penetrating radar (GPR) application in tunnel lining detection practice，the principle of electromagnetic wave of nondestructive detection technology is presented，and then the detection methods are introduced. Detection results and characteristics of wave figure which covers lining thickness，lining defect，and bar distributing situation are shown. Feedback suggestions of construction as well as problems encountered in practice when adopting GPR to detect tunnel lining quality are given. Finally，related conclusions and suggestions are proposed.

Key words road engineering；electromagnetic wave；nondestructive detect；ground penetrating radar；lining

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