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隧道塌方区加固后的施工监测与仿真分析

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摘要 摘要: 常德—张家界高速公路关口垭隧道右洞YK73+925~YK73+955段在施工过程中出现塌方, 分析塌方原因后, 结合工程具体情况, 采用超前小导管预注浆辅以工字钢拱架处理塌方区, 在处理段增设2个监测断面, 并利用有限元法进行数值模拟分析, 现场监控量测和有限元计算得到隧道收敛位移和拱顶下沉规律基本一致, 且小于规范允许值, 表明超前小导管预注浆方法处理塌方区效果良好。

关键词 [关键词: 隧道工程](#) [隧道塌方](#) [超前小导管注浆](#) [现场监测](#) [有限元模拟](#)

分类号

IN-SITU MONITORING AND FEM SIMULATION ANALYSIS OF

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Abstract

Abstract: Because of continuous precipitation and cracked surrounding rock, collapse of tunnel was found in the section YK73+955-YK73+925. According to engineering geology and in-situ construction condition, ahead ductile grouting method was applied to the surrounding rock consolidation of the tunnel. In order to investigate consolidation effect, two cross-sections of collapse zone measurement were increased; and finite element simulation analysis was applied to a cross-section. Measurement and calculation results of convergence displacement and vault subsidence show that tunneling collapse zone was consolidated by ahead ductile grouting method successfully.

Key words [Key words: tunneling engineering](#) [collapsed tunneling](#) [ahead ductile grouting method](#) [in-situ monitoring](#) [finite element simulation](#)

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