

高速公路偏压隧道施工动态监测与有限元仿真模拟

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摘要 对崇遵高速公路龙井隧道进口段施工过程中现场监测数据以及有限元分析结果进行对比研究, 得出了在偏压作用下隧道施工过程中围岩位移的变化规律。阐述了现场动态监控量测与有限元仿真模拟相结合的方法对实现隧道信息化施工的重要性。

关键词 [隧道工程](#); [偏压隧道](#); [动态监测](#); [有限元模拟](#); [信息化施工](#)

分类号

DYNAMIC MONITORING AND FEM SIMULATION ANALYSIS OF AN EXPRESSWAY TUNNEL WITH UNSYMMETRICAL LOADINGS

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Abstract

FEM calculation results and the time series of in-situ measures for the entrance of Longjin tunnel on the Chong-Zun expressway are presented. A FEM model is established to simulate the deformation behaviors of the tunnel. The anchors are simulated with the anchorage elements, while the cement lining and the steel-arc shelf are simulated with the straight beam elements. The results show that the deformation behavior of the surrounding rock mass is controlled by unsymmetrical loadings during the process of construction. It is proposed that not only the in-situ dynamic measurements but also the analysis of FEM be important for successful construction of the tunnel.

Key words [tunnel engineering](#); [unsymmetrical loading tunnel](#); [dynamic monitoring](#); [FEM simulation](#); [information-oriented construction](#)

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