

大断面小净距公路隧道现场监测分析研究

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摘要 针对大断面小净距隧道的特点, 对福建省鹤上隧道进行地表下沉、围岩内部位移、洞周收敛、拱顶下沉、围岩压力、衬砌内力等项目的监测工作。基于监测结果, 分析该隧道围岩和支护系统的变形及受力特点, 指出小净距隧道开挖影响的时空范围和隧道衬砌支护的最佳时机, 并为支护体系的优化提供依据。研究结论可为类似条件下工程的设计、施工和监测提供借鉴。

关键词 [隧道工程](#); [小净距](#); [大断面](#); [公路隧道](#); [监控量测](#)

分类号

STUDY ON SITE MONITORING OF LARGE-SECTION HIGHWAY TUNNELS WITH SMALL CLEAR SPACING

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Abstract

Heshang tunnel is the first large-section highway tunnel with small clear spacing in Fujian Province. It is critical to make a comprehensive monitoring on the mechanical characteristics of the tunnel during construction. According to its characteristics, some monitoring tasks have been performed in Heshang tunnel, including the ground settlement, crown settlement, convergence, surrounding rocks displacement, surrounding rocks pressure and internal force in lining, etc. Based on the measured data, the deformation and stress properties of surrounding rocks and supporting system are analyzed; the interaction time-space range in the construction of two-arch tunnels with small clear spacing is presented; and the best time of support and secondary lining is given. Meanwhile, the real-time monitoring information is applied to optimizing the supporting system. The experiences and conclusions presented can be adopted in the design, construction and research of similar tunnels.

Key words [tunneling engineering](#); [small clear spacing](#); [large-section](#); [highway tunnels](#); [site monitoring](#)

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