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雪峰山高速公路隧道F2断层带的综合超前地质预报

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摘要　F2断层是雪峰山隧道通过区一条规模较大的断层带，在隧道施工中可能会对围岩稳定产生较大的影响，故在隧道施工期间对其开展超前预报。在雪峰山隧道施工过程中，运用多种方法对F2断层带进行综合超前地质预报。在超前地质预报中以地质分析为主线，运用TSP、洞壁应力测试、断层前兆预测法和断层错动机制解等多种方法开展综合预报。预报结果认为，ZK97+193～ZK97+220段已进入F2断层带的影响带，从ZK97+220开始已进入F2的边缘带，并预报ZK97+235桩号左右就进入F2的主干带。预报结果同实际开挖情况对比可知，预报效果较好。

关键词　隧道工程；公路隧道；断层带；超前地质预报

分类号

COMPREHENSIVE ADVANCED GEOLOGICAL PREDICTION OF FAULT F2 IN XUEFENG MOUNTAIN HIGHWAY TUNNEL

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Abstract

The Shaoyang—Huaihua highway is a section of the Shanghai—Ruili highway，which is a main national highway. The Xuefeng mountain highway tunnel，which is under construction，is the largest controlling project of Shaoyang—Huaihua highway. The length of the Xuefeng mountain tunnel is about 7 km and the largest thickness of its overlay is about 850 m. The fault F2 is a huge fault，which may have some effects on stability of surrounding rockmass during the tunnel construction，so it is necessary that accurate advanced prediction of the fault is given during the tunnel construction. During Xuefeng mountain construction，several kinds of prediction methods are used to predict the fault F2. Based on geological analyses，tunnel seismic prediction(TSP)，testing of surrounding rock stress，prediction method of fault portent and mechanism of fault movement are used in the comprehensive advanced geological prediction. The results of the prediction are as follows：section of ZK97+ 193–ZK97+220 will be influenced by fault F2；the fringe zone of will appear in section ZK97+220，and the central zone of the fault F2 will start in the section ZK97+235. By comparing the results of the prediction and in-situ results，the advanced prediction has encouraging effects.

Key words　tunneling engineering；highway tunnel；faults；advanced geological prediction

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