

论文

TSP在岩溶区山岭隧道预报中的应用研究

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摘要:

岩溶隧道水文和工程地质条件复杂多变, 难以在勘察阶段探明可能引发施工期地质灾害的不良地质体的具体位置、规模和性质. 为了避免因盲目施工而造成的突水、涌泥和塌方等事故的发生, 迫切需要对施工期的隧道超前地质预报进行研究. TSP隧道地震预报系统可以有效预报掌子面前方100~150m以内地质体的位置、规模和性质. 采用TSP超前地质预报技术对岩溶隧道进行探测, 并对多个成功预报实例进行深入分析, 归纳了溶洞和暗河等在TSP中的具体反映, 总结出洞穴和暗河的判识规律, 对类似地质条件下的超前地质预报工作具有一定的指导意义.

关键词: TSP隧道地震预报 岩溶隧道 溶洞 暗河

Application of the TSP geological forecast method of a mountain tunnel in a karst zone

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Abstract:

Hydrogeological and engineering geological conditions of tunnels, in karst developed areas, are always highly changing and complex. In engineering investigation work, it is difficult to prove positions, sizes and properties of bad natural geological bodies, which may induce geological hazards in the course of construction. In order to avoid security accidents triggered or produced by rough construction such as water flush, mud (sand) rush, collapse etc, it is urgent to do research on the predictions of bad natural geological bodies in the construction period. TSP can effectively predict positions, sizes and properties of bad natural geological bodies which are located 100~150?m ahead of the tunnel working face. Using TSP geological forecast technology to probe karst tunnels, several TSP forecast examples of the highway tunnel in a karst zone were thoroughly analyzed, the exact responses of underground river and karst caves were established, and the distinguishing rule was obtained.Future work for similar geological forecasts could be guided to some extent.

Keywords: TSP karst tunnel karst caves underground river

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