Postprint: Exploration of Risk Management Techniques for High-Speed Railway Tunnel Construction

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Abstract

During high-speed railway tunnel construction, engineering personnel are consistently exposed to risk factors originating from various environmental conditions due to constraints imposed by geographical settings and related technical limitations. In recent years, a series of safety accidents have frequently occurred in tunnel construction projects in China, primarily attributable to weak risk awareness among construction personnel and a lack of high-level risk management competencies. In response, this paper conducts a comprehensive systematic analysis of tunnel construction management technologies and performs in-depth research on safety risks in tunnel construction, thereby providing an effective reference for tunnel engineering construction in China.

Full Text

Preamble

Exploration of Risk Management Technology for High-Speed Railway Tunnel Construction (China Railway 16th Bureau Group 3rd Engineering Co., Ltd., Huzhou, Zhejiang 313000, China)

Abstract

During high-speed railway tunnel construction, engineering personnel consistently face operational risks stemming from various environmental factors due to constraints imposed by geological conditions and available technical methods. In recent years, China has witnessed a series of safety accidents in tunnel construction, primarily attributable to weak risk awareness among construction personnel and a lack of sophisticated risk management capabilities. In response, this paper presents a comprehensive systematic analysis of tunnel construction

management technologies and conducts an in-depth investigation into safety risks inherent in tunnel construction, thereby offering valuable insights for tunnel engineering projects in China.

Keywords: high-speed railway; tunnel construction; risk management

Note: Figure translations are in progress. See original paper for figures.