
Development of exploration ahead of tunnel face using excavation blasting

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TFT exploration has been developed as original technology exploration ahead of tunnel face. This report describes the development background and verifications at each stage of the development process. First, in the initial stage of development, a prototype using commercially available equipment was developed, and the characteristics of the system were evaluated by comparison and verification with the conventional technology. Next, we proceeded with verification at tunnel construction sites with various geological conditions, grasped site needs and operational issues, and developed a commercialization system as a general-purpose system. Furthermore, in the software development for commercialization, we considered an analysis method that can be conducted as daily work, assuming operation by a tunnel engineer. Regarding the analysis results, a quantitative prediction method was proposed as a method that can be used for construction management.
