

Study on Monitoring Techniques Developed for a City Railway Construction

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Abstract : Currently, sinkholes may occur due to natural or unknown causes. When the sinkhole is an instantaneous phenomenon, most accidents occur because of significant damage. Thus, methods of monitoring are being actively researched, such that the impact of the accident can be mitigated. A sinkhole can severely affect and wreak havoc in community-based facilities such as a city railway construction. Therefore, the development of a laser / scanning system and an image-based tunnel is one method of pre-monitoring that it stops the accidents. The laser scanning is being used but this has shortcomings as it involves the development of expensive equipment. A laser / videobased scanning tunnel is being developed at Korea Railroad Research Institute. This is designed to automatically operate the railway. The purpose of the scanning is to obtain an image of the city such as of railway structures (stations, tunnel). At the railway structures, it has developed 3D laser scanning that can find a micro-crack can not be distinguished by the eye. An additional aim is to develop technology to monitor the status of the railway structure without the need for expensive post-processing of 3D laser scanning equipment, by developing corresponding software.

Keywords : 3D laser scanning, sinkhole, tunnel, city railway construction

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