Robot and drone inspection in railway - application and challenge
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Abstract

The traditional railway inspection work falls under the '4Ds' condition (Dangerous, Difficult, Dirty and Dull). Also, inspection results are subjective, which are largely depended on the proficiency and personal experience of inspection staff. In recent years, inspection robots, drones, GPR and lidars, etc. have been gradually used in the operation and maintenance of railway, combined with artificial intelligence technology to increase the efficiency of inspection, and ensure the safety of railway transportation. This report introduces what are railway inspection and maintenance work, and how railway inspection robots and drones work. The future trends and challenges for developing railway inspection robots and drones will be discussed.

Short CV

Dr. Guoqing Jing, is a professor in School of Civil Engineering, Beijing Jiaotong University, China. Over the past decade, he has been devoted to the research of track engineering and track maintenance work. He has presided over 3 NSFC projects, published more than 50 papers (EI and SCI) on ballasted track bed, obtained 15 patents, published monographs on railway ballasted track bed, lateral resistance of track bed and railway sleepers. He is invited to be the doctoral defense judge of universities in Norway, France, the Netherlands, the United Kingdom, etc.