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Special Issue Reprint

Advances in Condition Monitoring of Railway Infrastructures

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This Special Issue compiles recent research studies, findings, and accomplishments pertaining to the advanced planning, construction, monitoring, maintenance, and administration of railway infrastructure. Within this collection, a diverse range of innovative and unique research topics is featured, encompassing advanced analytical and numerical simulation methodologies, alongside experimental contributions applied to the field of railway infrastructure. The scientific themes explored in this issue can be outlined as follows: structural integrity; structural condition assessment; automatic damage detection/identification; wayside and onboard monitoring systems; digital twins; model calibration and validation; novel health monitoring; new sensors and technologies (photogrammetry, laser scanning, drones, wireless); computer vision techniques; non-destructive testing (NDT); remote inspection strategies; BIM; Big Data and Internet of Things; artificial intelligence; augmented reality and virtual reality; disaster risk reduction; emergency management; intelligent management systems; condition assessment under extreme load scenarios/climate changes (wind, seismic, flooding, scour). As the Guest Editors, we express our gratitude to all authors who contributed papers to this Special Issue. All the papers published were peer-reviewed by experts in the field, whose insightful comments significantly enhanced the overall quality of the publication.



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