Special Issue

Recent Advances in Vehicle-Track-Ground Coupling Dynamics and Railway-Induced Ground Vibration

Message from the Guest Editor

When train vibrations or train-induced vibrations are of interest, in many cases, single components cannot be analysed seperately. Therefore, the coupling of the subsystems is of great importance, including: vehicle-track interactions; track–soil interactions; train-induced ground vibration. The influence of the coupling/interaction on the vibration of the vehicle, track or environment will be analysed. A special focus will be put on the forces between vehicle and track and between track and soil. The following problems are also proposed: excitation mechanisms, such as irregularities (geometry and stiffness, continuous or singular, crosses and switches, transition zones), dynamic loads and static loads; prediction of ground vibration; mitigation measures; damage development and damage identification. It is the aim of this Special Issue to bring together mechanical and civil engineers and vehicle, track and ground vibration specialists. At least two components should be analysed in interaction; all three components in coupled dynamics would be perfect.

Guest Editor

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Deadline for manuscript submissions

closed (20 August 2024)

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/135600

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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