Special Issue

Advances in Vehicle Dynamics and Friction Estimation

Message from the Guest Editor

Proper operations of railway transportation systems during both braking and traction maneuvers require adequate values of the adhesion coefficient, but contaminants can strongly affect the shape of the adhesion curve as a function of the contact creepage. Hence, a deep knowledge of adhesion behavior under different conditions is essential to optimize the dynamic behavior of railway vehicles and to define efficient and reliable algorithms for on-board mechatronic devices and control strategies for adjusting the traction/braking torque, e.g., wheel slide protection (WSP) and antiskid systems. This Special Issue calls for papers dealing with advanced and innovative aspects regarding the experimental investigation, the realtime estimation, the numerical modeling, and the optimization of the wheel–rail adhesion coefficient. In view of the widespread applications of digital twins, this Special Issue also welcomes works regarding machine learning techniques. **Keyword:** wheel–rail adhesion; adhesion recovery; degraded adhesion; friction modifiers; traction and braking; test rigs; numerical simulation; digital twin; wear; machine learning techniques

Guest Editor

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Deadline for manuscript submissions

closed (30 September 2023)

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/168965

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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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