



Advances in Vehicle Dynamics and Friction Estimation

Guest Editor:

Dr. Nicolò Zampieri

Department of Mechanical and
Aerospace Engineering,
Politecnico di Torino, 10129
Torino, Italy

Deadline for manuscript
submissions:

closed (30 September 2023)

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





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica,
Politecnico di Milano, Piazza L.
da Vinci 32, 20133 Milano, Italy

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q1 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)

Contact Us

Applied Sciences Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/applsci
applsci@mdpi.com
[X@Applsci](#)