



New Insights into Railway Vehicle Dynamics

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Message from the Guest Editors

Dear Colleagues,

It is widely acknowledged that developing higher-speed rail transit is important. However, higher-speed, lighter-weight, and lower-axle-load designs will lead to a sharp increase in the aerodynamic loads of the train and the sensitivity of the vehicle system to external disturbances, which will weaken the train's toughness against external disturbances and further increase the risk of operational instability. This adds new challenges to the contradictory regulation between weight reduction–speed increase, energy saving–consumption reduction, and safety–stability operation performance of higher-speed trains, which has become a restriction on the safe, efficient, and green development of higher-speed rail transit. Hence, it is urgent to research new technologies that are suitable for higher-speed trains such as aerodynamics, vehicle dynamics, and safety operation in special weather environments such as strong winds from new perspectives.

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Message from the Editor-in-Chief

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