

Eisenbahnwesen-Seminar

„Innovative measurement system supporting railway infrastructure management“

Prof. Dr. Bartosz Firlik

Poznan University of Technology | Institute of Transport
Department of Rail Vehicles

Montag, 07. November 2022 | 18:00 Uhr

The core element of the presented system is a modern measuring vehicle equipped with state-of-the-art sensor subsystems. The data collected by the vehicle and the early warning systems installed on selected tramways allow for:

- measurement and assessment of track geometry and kinematic and structure gauge,
- detection of rail defects,
- assessment of the condition of the overhead contact line system,
- analysis of wear and technical condition of the track infrastructure elements
- evaluation of dynamic vehicle-track interaction,
- track classification in terms of ride comfort, derailment safety and rolling noise.

All data in the Ditrans system is collected using state-of-the-art sensors and transferred to the cloud, where it is processed. The results are accessible by state-of-the-art web applications including clear and comprehensible reports, allowing the user to:

- assess the current wear intensity of the light rail infrastructure,
- determine the permissible running speed on a given track section,
- predict the service life of individual track sections,
- select, rank and classify track sections by the need for repair, renovation or upgrade.

Prof. Dr. Bartosz Firlik is an associate professor in Division of Rail Transport at the Poznan University of Technology. He is a specialist in the dynamics of rail vehicles, persistent researcher of phenomena occurring in the area of wheel-rail interface with over 80 scientific publications.