XXI INTERNATIONAL SCIENTIFIC-EXPERT CONFERENCE ON RAILWAYS
RAILCON '24
October 10-11, 2024; Niš, Serbia

Thesis paper DOI: 10.5937/Railcon24153R

WHEEL SLIDE PROTECTION IN RAILWAY VEHICLES BRAKING

Student: Lazar RANKIĆ [1]
Mentor: Dragan MILKOVIĆ [2][0000-0002-3739-4600]

Abstract *– The paper presents the results of master's thesis dealing with checking the brake performances of railway vehicles at different adhesion conditions and working principle of wheel slide protection systems. The braking system is a significant system responsible for safe service of railway transport. It must meet many requirements defined in different international standards. The main terms and definitions associated with wheel slide protection are presented and explained. This research focuses wheel slide protection and its role to ensure the smallest possible increase in stopping distance in conditions of low adhesion for vehicles with pneumatic brake system and for the KT4 tram as an electric type of vehicle. Several control algorithms for control of brake system performances and wheel slide protection are presented along with their input and output parameters and error evaluations. During research we used different measurement methods and techniques within on-track brake tests with the TVEMA track recording vehicle of "Serbian Railway Infrastructure" AD.*

Keywords – wheel slide protection, railway brakes, on-track tests.

[1] University of Belgrade, Faculty of Mechanical Engineering, Kraljice Marije 16, 11000 Belgrade, dmilkovic@mas.bg.ac.rs
[2] University of Belgrade, Faculty of Mechanical Engineering, Kraljice Marije 16, 11000 Belgrade, rankic.lazar@yahoo.com