ITMS'2018

Forum on Innovative Technologies and Management for Sustainability, ITMS'2018, 27-28 April 2018, Panevėžys, Lithuania

MATHEMATICAL SIMULATION OF SPATIAL OSCILLATIONS OF THE "UNDERFRAME-TRACK" SYSTEM INTERACTION

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Mathematical Simulation of Spatial Oscillations of the "Underframe-Track" System Interaction / I. Klimenko, L. Černiauskaitė, L. Neduzha, O. Ochkasov // Proc. of 12th Intern. Conf. «Intelligent Technologies in Logistics and Mechatronics Systems – ITELMS'2018».

Abstract

The article presents mathematical simulation of spatial oscillations of the "underframe-track" system interaction. It describes a design scheme of the freight-passenger electric locomotive, taking into account details of construction and the mathematical model of its spatial oscillations. The connections imposed on the system, the forces arising in them, as well as the mutual displacements of all the bodies in the system are considered. Differential equations of system oscillations are composed on the basis of Lagrange's equations of the second kind taking into account details of construction of the electric locomotive. The paper presents some results of calculations for the cases of an electric locomotive movement on the straight sections of the track, curves of small and mean radius.

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Peer-review under responsibility of the Kaunas University of Technology, Panevėžys faculty of Technologies and Business

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Keywords: "underframe-track" system, rolling stock, interaction, locomotive, mathematical model, design scheme, dynamic coefficients, stresses

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