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

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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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