Freight Car Bogie Properties Analysis by Means of Simulation Computations

Tomas Lack, Juraj Gerlici, Maria Manurova
Faculty of Mechanical Engineering, Department of Transport and Handling Machines, University of Zilina. Univerzitná 8215/1, 010 26 Zilina. Slovak Republic. E-mail: tomas.lack@fstroj.uniza.sk, juraj.gerlici@fstroj.uniza.sk, maria.manurova@fstroj.uniza.sk

The article deals with the results of the simulation analysis of a railway wagon bogie model. We analysed four freight wagon bogie variants for its dynamics properties research. The bogie models correspond in general to the Y25 bogie concept. The models were created in SIMPACK software enhanced by the RAIL module. From the research results depicted in the graphs we found out, that the newly designed bogie variant gives the best results when compared to the other analysed versions. The newly designed model consists of a standard Y25 bogie frame with two Lenoire friction dampers. This bogie is equipped with longitudinal linkages on both sides. These linkages are completed with a radial torsion binding, torsion rod, between side bogie parts. The contact of railway wheels and rails generates active forces affecting the surface contact, affecting the size of the normal and tangential stress, wear surfaces of the wheel/rail, or directly the size of the derailment.

Keywords: Chassis, Lenoir, Damper, Coupling, Simulation

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