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EFFECTS OF VARIATIONS IN FORM OF WHEEL PROFILES IN OPERATION ON DYNAMIC QUALITIES OF FREIGHT CARS AND INDICES OF THEIR INTERACTION WITH RAILWAY TRACK

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The work objective is to study the effects of variations in the form of the wheel profiles in operation on the dynamic qualities of the freight cars and the indices of their interactions with the rail track.

The paper presents the results of studies in the effects of variation in the form of the wheel profiles in wear on the dynamic qualities and the indices of interactions between the gauge and the two open cars with complexly retrofitted bogies of the 18-100 type and the ITM-73 wheel profile, and the 18-100 standard car with the production bogies and the standard wheels.

Dynamic qualities of the above vehicles in running on straight tracks with random disturbances corresponding to its good state are analyzed. It is demonstrated that variations in the form of the wheel profiles in wear result in the deterioration of dynamic qualities of both unloaded and loaded cars, during which a standard car suffers largely than the vehicle with complexly retrofitted bogies.

The effects of variations in the form of the wheel profiles on the indices of interactions between the cars and the gauge in running on straight track are estimated. It is shown that the characteristics of interactions between the vehicles and the gauge are improved in a rapid wear of the wheels.

Keywords: *forms of wheels profiles, wear, freight cars, dynamic qualities, railway gauge, indices of interaction.*

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