

## ANALYSIS OF VERTICAL COMPONENTS OF DISTURBANCES FOR CONVENTIONAL PREDICTING DYNAMIC QUALITIES OF FREIGHT CARS

The work aim is to assess the admissibility of a number of components of the calculated disturbances to predict the dynamic qualities of the freight cars in a vertical plane. In the research methods of mathematical modelling have been employed.

Three groups of the calculated disturbances are examined. The first group deals with a polyharmonic model whose parameters are determined analyzing irregularities in the areas of the main track of the Pridneprovsk Railways. The second group of disturbances is formed by the formulas and tables from a Handbook on Calculating Irregularities of Railway Track. Irregularities of the software package "Universal Mechanism" present the third group. A level of components of those disturbances is analysed and the normalized factors of dynamic qualities of empty and loaded open wagons in a wide range of speeds are computed. Conclusions on the serviceability of disturbances considered for predictions are made comparing assessments of factors and the corresponding experimental data.

**Keywords:** *freight cars, calculated disturbances, indices of dynamic qualities.*

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