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Assessment of the Railway Track Deformability Behaviour as the Parameter of Operational Availability Function

Оцінка деформуємості залізничної колії як параметра функції експлуатаційної готовності

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Abstract

In paper discusses the problem of the maintenance conditions of the railway track to ensure operational availability in terms of ensuring reliability and maintainability program. The research aims to assess the amount of work spent in railway track deformability under vehicle influence when various railway track stiffness and at different speeds of the vehicle. The research aims to assess the amount of work spent in railway track deformability under vehicle influence when various railway track stiffness and at different speeds of the vehicle. Authors considered the influence of the vehicle speed movement on the vertical dynamic load from vehicle to the rail, the vertical dynamic rail deflection, and vertical dynamic stiffness of the railway track. It allowed estimating the amount of deformability work performed by the rail at vertical load.

В статті розглядається проблема умов утримання залізничної колії для забезпечення експлуатаційної готовності з точки зору програми забезпечення надійності та ремонтопридатності. Метою дослідження є оцінка обсягу робіт, що витрачаються на деформацію залізничної колії під впливом транспортного засобу при різній жорсткості залізничної колії і при різних швидкостях руху транспортного засобу. Розглянуто вплив швидкості руху вагона на вертикальне динамічне навантаження від вагона на рейки, вертикальний динамічний прогин рейки і вертикальну динамічну жорсткість залізничної колії. Це дозволило оцінити обсяг деформативності роботи, що виконується рейкою при вертикальному навантаженні.

KEY WORDS: *operational availability, track deformability, dynamic load, dynamic rail deflection, stiffness of the railway track*

експлуатаційна готовність, деформативність колії, динамічне навантаження, динамічний прогин рейки, жорсткість залізничної колії

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