Detection and evaluation method of track bed sedimentation

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Abstract

high-speed railway transportation has some incomparable advantages, such as the land high-usage, low energy consumption, little environmental pollution and high security. In the past six years, China developed high-speed railway very rapidly, and in future the momentum of development will continue. Track bed sedimentation, especially the uneven sedimentation will affect the quality of vehicle operating, or even suffer serious traffic accident and cause heavy loss to nation and passengers. A new method has been designed which is based on multi-magnetic Hall sensors. In this paper, the key issues of Automatic Measurement Method have also been discussed. In the measurement of sub-grade sedimentation, the method based on Hall sensors multitrigger and automatic control of high-precision laser distance-phase testing is implemented; the status of track bed is correspond evaluated based on the detection. The results show that the method can be an effective measure to improve the efficiency and accuracy of automatic testing track bed sedimentation, and the evaluation system can ensure the safety of the High-speed railway transportation.

Keywords

Track bed sedimentation, Hall induction, Automatic measurement, Evaluation system.