

Running Safety Assessment for Flange climbing at Low Speeds based on Derailment Quotient and Wheel Rise

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We propose an assessment quantity for running safety, when vehicles run on sharp curves at low speed. Using measured data obtained from running tests on a test track with several types of artificial track irregularities such as track twist and rail misalignment etc., which can induce flange climb derailment, we investigate the relationship between the derailment quotient and wheel rise on the side of high rail. It shows that the filtered derailment quotient is similar to the wheel rise trend. As a result, the proposed assessment quantity is expressed as the cumulative value of the derailment quotient while the derailment quotient exceeds its target maximum value.