

## **The Predicting Model of Worn Profile of Rail based on Multi-body Dynamics and its Validation**

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Railheads are subjected to severe contact condition with wheels during repeated passage of vehicles. As the results of severe contact condition with wheels, wears of rail or rail defects are generated on the railheads. Rail profile will be changed due to wear development. The worn profiles of rail are different and complexity at each section because the condition of wheel/rail contact condition will be changed continuously, according to the running condition of vehicle and track geometry condition. Therefore, it is very important to predict the worn profiles of rail based on the analysis of vehicle dynamics. In this study, we constructed a model for predicting worn profiles of rail by use of multibody dynamics and verified the validity of this model.