

Numerical Simulation Study on How to Improve Bogie for Raising Running Safety during Seismic Vibration

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After Hyogo-ken Nanbu earthquake in 1995, we developed a vehicle dynamics simulation program(VDS) for seismic vibration, some vibration experiment using an actual Shinkansen bogie was executed, and the analysis of the railway vehicle during seismic vibration was performed energetically in Railway Technical Research Institute. Now, we are studying about improvement in running safety of the railway vehicle for seismic vibration using these developed analysis technologies. In this paper, the analysis how to improve performance for running safety is carried out through changing parameters of bogie. The bogie parameters include the performance of a spring and a damper, a stopper. However, it is difficult to improve the running safety at the abnormal case such as occurrence of earthquake, without spoiling the usual bogie performance. Some equipments that improve safety performance by being activated only when big earthquake occurs were devised. VDS proved their effects.