

## **Recent Research and Development in Railway Dynamics**

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Train operation causes numerous dynamic problems such as vibrations and noises. These phenomena induce not only environmental degradation but also deterioration of railway elements such as wheel/rail wear, track deterioration and fatigue failure of structures. Furthermore, seismic force acting on railway systems causes various problems relating to the running safety. We are making progress in the research and development to resolve such problems from the perspective of dynamics. For this purpose, we have started to develop a railway simulator using high performance computing technology for clarifying the dynamic behavior of the railway system. This paper will describe our current research activities in order to achieve a highly-safe and reliable railway system.