

Recent Research and Development on Railway Dynamics

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Train running causes numerous dynamic problems such as vibrations and noises. These matters bring about not only environmental degradation but also deterioration of railway elements such as wheel/rail wear, track deterioration and fatigue failure of structures. Further, external forces such as seismic forces shake railway systems and cause various problems relating to the running safety. We have carried out the research and development for solving such problems in order to attain high-grade performance of the railway systems. In addition, we have started to develop a railway simulator using high performance computing technology for clarifying the dynamic wheel/rail/track interaction. This paper describes the current major research activities especially addressed to achieving the highly-safe and reliable railways and the present state of things of the railway simulator.