

## **Recent Research and Development in 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 wears due to pantograph/wire contact and wheel/rail contact. Farther, external forces such as seismic forces shake railway systems and cause various problems on the running safety. We have carried out the research and development (R&D) for solving such problems in order to attain high-grade performance of the railway systems. This paper describes the current major R&D subjects and research activities especially for achieving the highly-reliable and low-cost railways dealt with chiefly by Railway Dynamics Division.