

**Load Transmission Characteristic to the Ballast Layer Focused  
on the Deformation Mode of the Sleeper**

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In this paper, we report the experimental modal analysis as developed for the 3PR-sleeper and the dynamic response measurement in the existing track in order to clarify the transmission characteristic of a dynamic load to the ballast layer. The result shows that the sleeper vibrates in its normal mode by some frequencies with a superior response of the load at the lower side of a sleeper, in addition, the deformed shape of sleeper's normal mode cause specific load distributions at the lower side of a sleeper.