

## **Longitudinal Vibration Analysis in the Train Set Caused by Tractive Force Variation**

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Since variation in driving or braking force may cause longitudinal vibrations of the vehicle, this phenomenon sometimes causes adhesion decline and further slips and skids. It is essential to elucidate the relationship between tractive force and longitudinal vibration in consideration of the electric and mechanical system in order to build a motor control method which enables us to improve tractive force and to reduce longitudinal vibration in the train set. In this report, regarding the longitudinal acceleration produced by the variation in tractive force, we make a comparison between the results obtained from tests by an actual car set and those obtained from numerical simulation. The result shows the validity of the numerical simulation.