

**A Method of Building a Vehicle Model for Hardware in the Loop Simulation and
Evaluation of Amplitude-frequency Response Tests Executed for Its Improvement**

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We have developed Hardware in the Loop Simulation (HILS) system to establish a virtual running test environment to replace actual test runs. The vehicle model for the HILS system is indispensable to run under real-time conditions, and simulate actual vehicle motions accurately. Then, we attempted to divide the model to several parts to enable the model to run under the foregoing conditions. In this paper, we introduce the model for the HILS, and report the result of amplitude-frequency response tests executed on the rolling stock motion stand for the performance improvement of the model by modifying its parameters.