

## **Simulation Technology for Rail-vehicles to Improve Environmental Issues**

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This paper introduces three topics of simulation technology for rail vehicles to improve environmental issues. The first topic is the development of a surge propagation simulator for AC fed rail vehicles consisting of four general purpose freeware. The second one is the development of a running energy simulator for hybrid rail vehicles by using originally developed software. The third one is the construction of an analysis model of on vehicle gear units to simulate the vibration conduction and acoustic emission, by using dedicated software, to reduce the noise level.