

**Estimation of the Energy Consumption of a Train Equipped with a High
Efficiency Induction Motor through Running Simulations**

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Induction motors are widely used as traction motors of railway vehicles. Because the energy loss of the traction motors accounts for a large portion of energy consumption in commuter trains, highly efficient traction motor is very effective for saving energy. Therefore, we have developed a high efficiency induction motor and have verified its efficiency through magnetic field analysis and performance tests with a prototype machine. In this paper, we show the calculation results of running simulations which estimate the energy consumption of a train equipped with the high efficiency induction motor. The results indicate that the energy consumption is reduced by 6% to 11% with the improved efficiency.