

Power Transmission Performance Verification of a Non-contact Power Supply System for Railway Vehicles

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A Non-contact Power Supply system (NPS) development in various devices is in progress. When applying the NPS to railway vehicles, the increase of loss is anticipated because an A.C. magnetic flux causes eddy current in the rails which have magnetism and conductivity. We propose the figure-of-eight coil configuration whereby we can reduce the eddy current loss, and designed the NPS for railway vehicles. A prototype NPS was made for a test line in the premises of the Railway Technical Research Institute on the basis of the design. As a result of the power-transmission test conducted on both the vehicles at a stop and running vehicles, it was verified that the NPS was suitable for the railway vehicle's power source.