

Case Study of Superconducting Cables for Railway Systems

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DC electric railway systems are widely used in Japan, including metropolitan areas. However, they have some problems, such as limited use of regenerative brakes and energy losses. In order to solve those problems, and to attain the essential energy saving of next generation electric railway systems, we have been studying the feasibility of applying superconducting power cables to DC electric feeder systems. In this study, investigations regarding effective use of regenerative brakes, loss reduction, etc have been carried out on the assumption that the substations concerned are connected with each other by superconducting power cables placed in parallel with the feeder line.