

**Insulation Diagnosis with a Focus on Partial Discharge
of the Propulsion Coils of the Superconducting Maglev**

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A huge number of ground coils will be required for outdoor use over an extended period. Therefore, it is necessary to secure efficient maintenance during the operation of ground coils. When the maglev vehicle runs, a high voltage is applied to the propulsion coils. We have verified efficient insulation diagnosis methods with a focus on the on partial discharge, which is a predictor of the insulation failure of the propulsion coils. In this paper, we developed a partial discharge model to evaluate insulation performance, and examined electromagnetic wave propagation involved in partial discharge.