

**Condition Monitoring of Maglev Ground Coils by Using Radio Communication  
between Sensor Tag and the Maintenance Vehicle**

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Ground coil is one of the most important equipments for high speed superconducting maglev system. However, because of an enormous number of ground coils along the guideway, maintenance work needs much time and effort. To execute the maintenance work efficiently, we have developed a condition monitoring system by using radio communication between the sensor tag and the maintenance vehicle. To monitor the ground coil condition, two types of the sensor tags have been developed. One type is a passive sensor tag without battery and another type is a semi-passive sensor tag with battery which is used only for sensing. Radio communication tests between the running vehicle and the sensor tag were executed on the Miyazaki Maglev Test Line. Identification number and monitoring results were collected when the vehicle equipped with the reader passed by the sensor tag. We succeeded in collecting the passive sensor tag data up to 40km/h and the semi-passive sensor tag data up to 55km/h. These results indicate that the system can monitor an enormous number of ground coils efficiently.