

Non Destructive Test of the White Layer on Rail Surface by the SQUID

Yoshiki MIYAZAKI Ken NAGASHIMA Hiroshi SEINO
Yoshichika TANAKA Yuuki ARAI Hideo ITOZAKI

Railway rail often suffers from generation of a hard and brittle thermal transformation structure called “white layer” due to slip / slide of wheels at the time of traction / braking of a train. Micro cracks are expected to develop around the white layer and the developed micro cracks may cause rail damage such as separation of a tread surface. Accordingly it is required to clarify the relationship among the white layer, cracks and damage. In this research, non-destructive inspection of white layers using superconducting quantum interference device (SQUID) has been studied, and an improved system that can detect the white layer in the field is reported.