

**Development of Nighttime Rail Temperature Prediction Method  
in Consideration of the Radiant Heat from Surrounding Geographical Features**

Fumihiro URAKAWA      Tsutomu WATANABE

This study proposed a new method capable of predicting the rail temperature distribution in nighttime at intervals of about 1 m by modeling the radiant heat of rail in detail using digital surface model (DSM) and meteorological data. To verify its prediction accuracy, the distribution of rail temperature and radiant heat were measured on an actual track. As a result, the minimum rail temperature was about 2°C high at the measurement points near buildings compared with that at other points due to strong radiant heat. We also confirmed that the proposed method can accurately reproduce the actual rail temperature distribution in nighttime.