Wide-area Rail Temperature Prediction Method Using GIS Data

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In actual tracks, variations in rail temperature and axial force due to the shadow of geographic features are assumed. However, it has not been clarified how these variations affect track buckling stability. In this paper, the rail temperature distribution of the track is calculated in consideration of the shadow of the geographic feature using the rail temperature prediction model. As a result, it is confirmed that the above-mentioned analysis can reproduce the drop of rail temperatures between 10 ℃ and 15 ℃, which corresponds to the rail temperature difference actually observed in shady and sunny areas.