

Propagation Prediction for Composite Scenarios of Dense Semi-Closed Obstacles in High-Speed Railway

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Abstract:

Unlike standard scenarios in high-speed railway, semi-closed obstacles (SCOs), such as crossing bridges, train stations, etc., densely appear and compose challenging scenarios for propagation prediction. By conjunctively utilizing the extended Hata model and the extra loss models for crossing bridges groups and train stations, this paper presents a hybrid model for propagation in such composite scenarios. The validation shows that the proposed model accurately predicts the propagation loss and, therefore, supports an effective way to involve the composite scenarios of dense SCOs in the network planning, simulation, and design of communication systems deployed on high-speed railway.