Special Issue

Optimization and Management of Urban Rail Transit Network

Message from the Guest Editors

Urban transit plays a pivotal role in transportation networks due to its cost-efficient, environmentally friendly, and fast travel characteristics. It has become indispensable for commuting, prompting cities to prioritize investment. However, as transit systems expand, operational constraints have emerged. including infrastructure maintenance, high train frequency, low integration, and challenges in capturing passenger demand. The study of urban transit systems typically requires coupling trains and passengers. Developing systems capable of handling dynamic passenger behavior, integrated train-crew scheduling, network coordination, and unified monitoringmaintenance is crucial. Such advancements enhance understanding of transit's collaborative role and contribute to urban travel behavior prediction and evaluation. Numerical simulation, experimental testing, and data analysis play key roles, with virtual platforms expediting discoveries. This Special Issue covers train operation, passenger analysis, energy use, network construction, and system-infrastructure interactions. We welcome studies involving transit trains and their interactions with passengers, crew, energy, and lines.

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