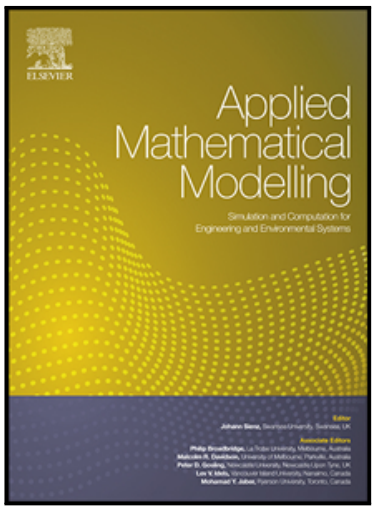

Comprehensive Optimization of Urban Rail Transit Timetable by Minimizing Total Travel Times under Time-dependent Passenger Demand and Congested Conditions

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Highlights

- timetabling model minimizing passenger total travel time under time-dependent passenger demand;
- Passenger left behind due to heavy congestions in train is considered;
- Train numbers, section running times and dwell times are free to change;
- An improved adaptive large neighborhood search algorithm is developed;
- Total travel time is minimized meanwhile keep train load factor is under a certain level;

TTT: total passenger travel time
LNS: large neighborhood search
ALNS: adaptive large neighborhood search
SA: simulated annealing
AWT: average passenger waiting time