Rolling Stock Rescheduling Algorithm for Passenger Trains during Disruption of Train Operation

Takashi SAKAGUCHI Keisuke SATO

Train dispatchers in charge of timetable recovery for passenger trains locally change the assignments of rolling stock at stations during disruption of train operation. The dispatchers in charge of rolling stock globally restore its changed schedule to the original one after the timetable recovery has been completed. This paper discusses the rolling stock re-assignment problem. We have modeled the issue as an integer programming problem with set-partitioning constraints, and solved it by using column generation technique. A numerical experiment using real data has revealed that our method provides a rolling-stock-rescheduling plan of satisfactory quality in acceptable computing time.