A Method of Determining Train Cancellation for Train Rescheduling under Speed Restricted Situations

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When train dispatchers detect heavy rain or strong wind in their railway lines, they have to reduce the speed of trains or to stop trains to keep safe train traffic. Because such operations can make trains delay, they also have to prepare a train rescheduling plan to suppress passengers' discomfort. Although many researchers focus on rescheduling algorithms to support train dispatchers, rescheduling algorithms under speed restricted situations has not been sufficiently discussed. In this paper, we present a simulation-based rescheduling algorithm in which we can take advantage of the information obtained in advance to reduce the computational complexity. Applying the algorithm to the real speed restricted scenarios, we can conclude that the algorithm works to obtain a valid train rescheduling plan in a short time.