An optimal approach to real-time resolution of disruptions to a train schedule

Cameron G. Walker
Department of Engineering Science
University of Auckland
New Zealand
cwalker@scitec.auckland.ac.nz

Abstract

This paper describes the development and implementation of an optimisation model used to resolve disruptions to an existing train timetable throughout the day, in real-time. It is the further development of a model designed by J. Snowdon (1999) which simultaneously solved the train timetable and train crewing problems. This parallel construction process was a unique approach to these problems at the time, and is continued in the methodology described in this paper. Results are presented which suggest that the speed of this solution process is sufficient to deal with real-time disruptions.