

عنوان مقاله:

FUZZY TRAIN ENERGY CONSUMPTION MINIMIZATION MODEL AND ALGORITHM

محل انتشار:

مجله سیستم های فازی، دوره 8، شماره 4 (سال: 1390)

تعداد صفحات اصل مقاله: 15

نویسندگان:

Xiang Li - *State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiao- tong University, Beijing 100044, China*

Dan Ralescu - *Department of Mathematical Sciences, University of Cincinnati, Cincinnati, Ohio 45221, USA*

Tao Tang - *State Key Laboratory of Rail Traffic Control and Safety, Beijing Jiao- tong University, Beijing 100044, China*

خلاصه مقاله:

Train energy saving problem investigates how to control train's velocity such that the quantity of energy consumption is minimized and some system constraints are satisfied. On the assumption that the train's weights on different links are estimated by fuzzy variables when making the train scheduling strategy, we study the fuzzy train energy saving problem. First, we propose a fuzzy energy consumption minimization model, which minimizes the average value and entropy of the fuzzy energy consumption under the maximal allowable velocity constraint and traversing time constraint. Furthermore, we analyze the properties of the optimal solution, and then design an iterative algorithm based on the Karush-Kuhn-Tucker conditions. Finally, we illustrate a numerical example to show the effectiveness of the proposed model and algorithm.

کلمات کلیدی:

Energy consumption, Train scheduling, Karush-Kuhn-Tucker conditions, Fuzzy variable

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