

Optimal toll charges: fuzzy optimization approach

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fuzzy bilevel programming problem / traffic network / fuzzy costs / linear bilevel programming problem / solution algorithm

The problem of determining optimal toll charges in a traffic network can be modelled as a linear bilevel programming problem. Travel costs for traversing an edge of the traffic network are not fixed and can be presented as fuzzy numbers. Then, a fuzzy bilevel programming problem arises. Using an approach by Rommelfanger in fuzzy linear programming, a crisp bilevel substitute problem is obtained. For this problem, necessary and sufficient optimality conditions are developed and a solution algorithm is proposed.

F. Heyde, A. Löhne, C. Tammer (eds.): Methods of Multicriteria Decision – Theory and Applications.

Erschienen in: Shaker Verlag, Aachen, 2009, pages 29-45.