

数学

灰色多随从二层线性规划问题及其解法

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摘要:

针对多随从二层线性规划问题, 结合灰色特征, 提出了灰色独立多随从二层线性规划问题. 建立了该问题的数学模型, 并证明了漂移型灰色独立多随从二层线性规划问题等价于漂移型灰色二层线性规划问题. 对于漂移型灰色独立多随从二层线性规划问题, 基于单纯形法设计了一种求解算法. 数值算例表明该算法是可行有效的.

关键词: 二层线性规划 灰色理论 独立多随从 单纯形方法

A Grey Linear Bilevel Programming Problem with Multiple Independent Followers and Its Algorithm

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Abstract:

Based on the linear bilevel programming problem with multiple independent followers and the characteristic of grey system, a grey linear bilevel programming problem with multiple independent followers (GLBMIF) was put forward, and its model was given. We showed that the drifting grey linear bilevel programming problem with multiple independent followers (GLBMIF(θ)) is equivalent to the drifting grey linear bilevel programming problem. An algorithm based on simplex method was developed to solve the GLBMIF (θ). A numerical example shows that the proposed algorithm is feasible and effective.

Keywords: linear bilevel programming grey system multiple independent followers; simplex method

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