

论文

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### 基于最大隶属度的区间概率灰色随机多准则决策方法

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## Grey Random Multi-criteria Decision-making Approach Based on Maximum Membership Degree

摘要 图/表 参考文献(0) 相关文章(15)

全文: PDF (166 KB) HTML (1 KB)

输出: BibTeX | EndNote (RIS) 背景资料

摘要 定义了一种灰色隶属函数. 针对概率为区间数、准则值为区间灰数的灰色随机多准则决策问题, 提出一种基于最大隶属度的决策方法. 首先, 运用区间数可能度排序向量将区间概率转化为点概率, 并将其转化为无风险决策问题; 然后, 计算各方案在负理想方案到正理想方案上的灰色隶属度, 并计算各方案准则值的相对灰度, 进而根据灰色隶属度和相对灰度大小对方案进行排序; 最后, 通过算例验证了该方法的可行性和有效性.

关键词: 多准则决策, 灰色随机, 最大隶属度, 区间概率, 灰度, Multi-criteria decision-making, Grey random, Maximum membership degree, Probability interval, Grey

Abstract: The grey membership degree function is defined. As for the grey random multi-criteria decision-making problems, in which probabilities are interval numbers and the attribute value of alternatives are interval grey numbers, a decision-making approach based on maximum membership degree is proposed. Firstly, the decision-making problem is transformed into riskfree problem by using the probability degree ranking vector of interval numbers to transform interval probabilities into point probabilities. Then the grey membership degrees of each alternative to the domain between the anti-ideal alternative and the ideal alternative are calculated, and the relative grey degrees are obtained. The order of the alternatives can be listed by comparing the grey membership degree and the relative grey degree of each alternative. Finally, an example shows the feasibility and effectiveness of this approach.

收稿日期: 2009-04-20 出版日期: 2010-04-28

基金资助: 国家自然科学基金项目

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引用本文:

wangjq. 基于最大隶属度的区间概率灰色随机多准则决策方法[J]. 控制与决策, 2010, 25(4): 493-496.

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