模糊商空间理论(模糊粒度计算方法)

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Abstract
In this paper, the quotient space model is extended to the fuzzy granular world and two main conclusions are given. First, the following four statements are equivalent: (1) a fuzzy equivalence relation given in universe X, (2) a normalized isosceles distance given in quotient space [X], (3) a hierarchical structure given in X, (4) a fuzzy knowledge base given in X. Second, the whole world with different fuzzy granularities composes a complete semi-order lattice. The results provide a powerful mathematical model and tool for granule computing.

摘要
把商空间模型推广到模糊粒度世界,并给出了两个基本结论.一个结论是,下面4种提法等价:(1) 在论域X上给定一个模糊等价关系;(2) 给定X的商空间上的一个归一化等腰距离;(3) 给定X的一个分层递阶结构;(4) 给定一个X的模糊知识基.另一个结论是,所有模糊粒度世界全体,构成一个完备半序格.这些结论为粒度计算提供了一个强有力的数学模型和工具.

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