

也不同,下面证明对于 $i(1 \leq i \leq n)$, 当 $A_j^* = A_{ij} (\forall j, j=1, 2, \dots, m)$ 时, 推理结果 B^* 等于 B_i 。

4.5 小结

本算法与已有算法有以下不同:

(1) 已有算法只研究了单条规则的模糊推理且只满足单条规则的还原性, 而对多重多维的情况未作详细讨论。本文给出的是多重多维情形下的推理算法, 在多重多维情形下都具有还原性。

(2) 提出的算法的推理机制与已有模糊推理算法不同。本文的算法既不同于 FATI, 也不同于 FITA(参见文[6])。

(3) 已有算法一般默认规则前件中的各前件对于规则后件的重要性是一样的, 但在实际应用中却并非如此。故若考虑规则前件中的各前件对于规则后件的重要性, 算法中还应对各前件加权。对于后件影响大的前件其权值也应该大, 则各前件对后件的综合影响程度 θ 可视为其与给定条件前件的相似度 N 和其权值 w 的乘积, 即 $\theta = wN$, 则其相应推理结果为 $B^* = \min\{1, B/\theta\}$ 或 $B^* = \theta B$ 。

(4) 已有的基于相似度的算法^[3]中, 相似度的计算方法往往是固定的, 而本算法中相似度的计算方法却可以是任意的, 只要满足相似度定义即可。算法在使用时可以根据需要选择不同的相似度, 这样使算法更具有灵活性。

结论 本文得到了一种新的模糊推理算法 FPATI, 并举

例说明了这种算法在多重多维推理的情况下, 满足还原性条件, 保证了推理结果的合理性。当然, 算法的还原性还需要进一步完整的证明。另外, 我们还可以类似于文[10]考虑各条规则的置信度因子以及对推理前件进行加权, 以期更充分地反映各规则的客观性, 这些都是今后工作研究的一个内容。

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