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### 基于神经网络的广义经典分配航迹关联算法

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### Application of Neural Network in Track Correlation of Distributed Multisensor Systems

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摘要

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**摘要** 在序贯航迹关联算法的基础上提出了一种广义经典分配航迹关联算法。此算法实际上是求约束条件下的函数最小值问题,属于组合优化问题,其计算复杂度随着目标数的增加而发生爆炸现象。根据Hop field神经网络模型解决此类问题的能力对此广义经典问题进行了求解。仿真实验结果表明,广义经典分配算法能够有效地解决航迹关联问题,而且用神经网络求解此问题降低了计算复杂性,并具有很高的关联正确率。

**关键词:** 广义经典分配 航迹关联 多传感器 神经网络 信息融合

**Abstract:** Track correlation is the main problem in the distributed multisensor system. This paper presents a generalized classical assignment algorithm based on the sequential track correlation criteria. This algorithm is actually a minimum problem under the restrict conditions, it belongs to the combined optimization problem and its computing burden increases heavily with the number of targets. Then the problem is dealt with by using the Hopfield neural network based on its ability of solving this kind of problem. Finally the simulation results are given, and the simulation experimental results illustrate that the generalized classical assignment algorithm can effectively solve the problem of track correlation, and that the neural network can decrease the computing burden and has higher correct association rate.

**Keywords:** generalized classical assignment track correlation multisensor neural network information fusion

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