

## 防御电子技术

### 基于加权K-近邻法和SVC的雷达辐射源信号识别

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摘要:

为提高支持向量聚类法对分布复杂、不均匀雷达辐射源信号样本聚类的正确率,提出一种结合剪辑近邻法、K-近邻法和支持向量聚类的无监督分类新方法。先采用支持向量聚类对所有未知样本作预分类,再按照一定的剪辑规则剪掉错误类别,最后利用K-近邻法对剪掉的样本按各已知类别不同分布进行加权分类。IRIS数据和辐射源信号聚类实验结果表明,此方法能平衡数据样本各局部分布,获得全局最优聚类分配。

关键词: 信号处理 雷达辐射源信号识别 支持向量聚类 K-近邻法

### Radar emitter signal recognition based on weighted K-nearest neighbor and SVC

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Abstract:

To enhance the correct rate that support vector clustering (SVC) processes radar emitter signal samples with complex and uneven distributions, a novel unsupervised clustering method combining editing nearest neighbor, K-nearest neighbor with SVC is presented. SVC is first employed to cluster unknown samples. Then wrong clusters are edited by using editing rules. Finally a K-nearest neighbor is introduced to classify the edited samples in terms of different distributions of known classes in a weighted way. Experiments conducted on IRIS data and radar emitter signals show that the proposed method can balance local distributions of samples and obtain the best global clustering.

Keywords: signal processing radar emitter signal recognition support vector clustering K-nearest neighbor

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