عنوان مقاله:

An Unsupervised Feature Selection Method Based on Nonlinear Manifold Embedding for Polarimetric SAR Image Classification

محل انتشار:

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خلاصه مقاله:

In this paper, we propose a method for polarimetric synthetic aperture radar (PolSAR) image classification. It's proven that one of the most important challenges in PolSAR image classification is the number of redundant features that are extracted from PolSAR images. Therefore, in this article to achieve the optimal result of PolSAR image classification, the redundant spatial-polarimetric features of PolSAR images will be reduced by using the proposed method. In our proposed dimension reduction algorithm, we use a Locally Linear Embedding (LLE) algorithm based on the graph framework. So, by applying the proposed method in the spatial-polarimetric features that are extracted from PolSAR images, the redundant features can be reduced accurately. Because the proposed LLE uses the sparse method to reduce the dimension of redundant features, it has higher performance compared with other traditional LLEs. In addition, the proposed method has a closed-form solution and it has a high performance even in small-size training .sets. Finally, the experimental results show the high performance of the proposed method

کلمات کلیدی:

Locally Linear Embedding, PolSAR, image classification, redundant features