

Experimental results related to the paper [ELM-based Spectral-Spatial Classification of Hyperspectral Images using Extended Morphological Profiles and Composite Feature Mappings](#) published in the [International Journal of Remote Sensing](#).

Abstract

Extreme Learning Machine (ELM) is a supervised learning technique for a class of feed forward neural networks with random weights that has recently been used with success for the classification of hyperspectral images. In this work we show that morphological techniques can be integrated in this kind of classifiers using several composite feature mappings which are proposed for ELM. In particular, we present a spectral-spatial ELM-based classifier for hyperspectral remote sensing images that integrates the information provided by extended morphological profiles. The proposed spectral-spatial classifier allows different weights for both (spatial and spectral) features outperforming other ELM-based classifiers in terms of accuracy for land cover applications. The accuracy classification results are also better than those obtained by equivalent spectral-spatial SVM-based classifiers.

The number of samples used in the experiments is the same as in the [review 2013](#)

Downloads

Execution outputs for ELM-EMP

For information see the README.txt files in the archives.

- * University of Pavia samples and maps [paviau_elm_emp_output.zip](#)
- * Pavia centre samples and maps [pavia_centre_elm_emp_output.zip](#)
- * Indian pines samples and maps [indian_pines_elm_emp_output.zip](#)
- * Salinas samples and maps [salinas_elm_emp_output.zip](#)

Execution outputs for ELM only (without EMP)

For information see the README.txt files in the archives.

- * University of Pavia samples and maps [paviau_elm_only_output.zip](#)
- * Pavia centre samples and maps [pavia_centre_elm_only_output.zip](#)
- * Indian pines samples and maps [indian_pines_elm_only_output.zip](#)
- * Salinas samples and maps [salinas_elm_only_output.zip](#)

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