

## **ACCURACY ASSESSMENT OF EXTRACTED ENDMEMBERS FOR HYPERSPETRAL IMAGES CLASSIFICATION**

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With advances of imaging sensors in these years, hyperspectral imagery is being applied increasingly more in different scientific fields. An important step in characterization of surface materials by means of hyperspectral image analysis is image classification using endmembers. Spectral unmixing is the best method for hyperspectral image classification. This method assumes that the pixel-to-pixel variability in a scene results from varying proportions of spectral endmembers. Spectral endmembers can be derived from the imagery or measurements in the laboratory or field. The main objective of this paper was to assess the ability of extracted endmembers against some different solutions for extraction of endmembers for hyperspectral image classification. In this paper we compared the Pixel Purity Index (PPI) and the Sequential Maximum Angle Convex Cone (SMACC) as two popular methods of endmember extraction with library and field spectra. We used spectral information divergence for detection desirable endmembers from field spectra. For accuracy assessment of spectral mixture analysis and production of endmember abundance images for each of methods, linear spectral unmixing algorithm is used. After comparison between results of these methods, it has been verified that field spectra have a better classification result in comparing with other endmember extraction methods. Also, the PPI has reliable results as an automatic endmember extraction method in comparing.

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