

COMPARATIVE STUDY OF LAND COVER LINEAR SPECTRAL MIXTURE ANALYSIS (LSMA) MODEL ON MULTISPECTRAL AND HYPERSPECTRAL IMAGERY

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ABSTRACT

Linear Spectral Mixture Analysis (LSMA) is an analytical technique that compares between the spectral characteristics of mixed pixels with the spectral characteristics baseline of pure object called endmember. This technique can actually be applied in various multispectral remote sensing of data, and in the analysis hyperspektral known as linear unmixing. Multispectral and Hypespektral image in theory have differences in terms of spectral resolution owned. The purposes of this study are (1) to determine the effect of different spectral resolution of these data to the results of the two analyzes, and (2) to determine the accuracy of the model LSMA both multispectral and hyperspectral imagery.

LSMA classification model begins with a statistical estimate of the number of noise on the image. It is intended to select the component images with minimum noise. These results will be used as input in determining the pixel purity index (PPI), so it can be used to find for candidate endmember in pure pixels. Endmember used is vegetation and non-vegetation.

Results of classification LSMA endmember fraction in percentage form one pixel. Analysis of a series of processes that have been carried out in this study show that the hyperspectral images provide information that is more varied or specific in detecting endmember, it can be seen from the resulting percentage accuracy in hyperspectral imagery is higher than the accuracy of the image of multispectral.

Keywords: LSMA, Hyperspectral, Multispectral, endmember, land cover