OPTIMUM THREE LAYERS FOR CHANGE DETECTION USING LANDSAT IMAGES

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Abstract: Change detection has been widely used in most applications. The Landsat satellite has been designed to provide 30-meter spatial resolution with multi-spectral image data (six bands). Detecting the optimum three layers using in change detection is a challenge. The objective of this research is to detect changes from optimum three layers using Landsat images instead of detecting changes from all layers to maintain resources of hardware and saving time to get significant changes. The change detection is applied by calculating the correlation coefficients of each two conjugate pixels from two different Landsat images for the same area of study. The experimental results show that the change detection using layers 2, 4, 5 and layers 3, 4, 5 (as another set) give results almost similar to results in case of using all layers. Landsat satellites serve a vital role in environmental and land resources monitoring, mapping, disaster assessment, oil/mineral exploration, earth observation, land use and regional planning.

Keywords: Landsat, Change detection, Correlation Coefficients.