

## A First Approximation of Tasseled-Cap Values for the Advanced Land Imager

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### Commission VIII

**KEY WORDS:** Image, Transformation, Land, Correlation, Landsat, Ecology

#### ABSTRACT:

Scientists have used tasseled-cap (TC) transformations on Landsat Multispectral Scanner (MSS), Thematic Mapper (TM) and Enhanced TM for years to get measures of brightness, greenness, wetness, and other characteristics from a remotely sensed image of the Earth. The Earth Observing-1 Advanced Land Imager (ALI) is a new U. S. National Aeronautic and Space Administration sensor that has similar spectral characteristics to Landsat TM. We have applied the tasseled-cap coefficients for specific Landsat image spectral bands to the corresponding ALI bands to obtain a first approximation of the TC values for an ALI scene covering a part of the Ozarks Highlands physiographic and ecological region of Missouri, USA. A comparison of these ALI first approximation TC values to the Landsat TC values shows a very high correlation (coefficient of determination,  $r^2$ , > 0.89) to layers 2 and 3 (greenness and wetness, respectively), and a fairly high correlation ( $r^2$  > 0.64) to all other layers. This first approximation can be used as a base from which to iteratively correct the coefficients and ultimately refine the TC coefficients for ALI images.

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