REMOTE SENSING TECHNIQUES APPLIED TO LAND USE AND LAND COVER DISCRIMINATION

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ABSTRACT

In this study two enhancement techniques are tested in terms of their ability to improve TM/LANDSAT data for land use and land cover discrimination. These techniques are IHS and decorrelation transformations. The study area consists of the Ribeirão Bonito basin in the Barra Bonita reservoir, which has a diversified agricultural occupation, located at the São Paulo State, with the following coordinates: South latitude 22 degrees 38 minutes to 22 degrees 27 minutes, and West longitude 42 degrees 11 minutes to 42 degrees 06 minutes (TM/LANDAST image orbit 220, point 76, quadrant "A", dated on July 4th, 1992). The digital analysis was performed with the aid of the SITIM/INPE software. Bands TM4, TM5 and TM3 were used as input for the IHS transformation. For the decorrelation enhancement two sets were use as input (RGB); TM4, TM5 and TM7 and TM4, TM3 and TM7. The products were assessed using their ability to discriminate the following targets: bare soil, reforestation land, sugarcane plantation, etc. Results showed that best enhancement was obtained using linear contrast stretch applied to I component, 32 gain to S component and 30 degrees rotation was applied to H component. The decorrelation was acquire using TM4, TM3, and TM7 color composites.