

Extraction of Urban Land Features from TM Landsat Image Using the Land Features Index and Tasseled Cap Transformation

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Abstract : In this paper we propose a method to map the urban areas. The method uses an arithmetic calculation processed from the land features indexes and Tasseled cap transformation TC of multi spectral Thematic Mapper Landsat TM image. For this purpose the derived indexes image from the original image such SAVI the soil adjusted vegetation index, UI the urban Index, and EBBI the enhanced built up and bareness index were stacked to form a new image and the bands were uncorrelated, also the Spectral Angle Mapper (SAM) and Spectral Information Divergence (SID) supervised classification approaches were first applied on the new image TM data using the reference spectra of the spectral library and subsequently the four urban, vegetation, water and soil land cover categories were extracted with their accuracy assessment. The urban features were represented using a logic calculation applied to the brightness, UI-SAVI, NDBI-greenness and EBBI- brightness data sets. The study applied to Blida and mentioned that the urban features can be mapped with an accuracy ranging from 92 % to 95%.

Keywords : EBBI, SAVI, Tasseled Cap Transformation, UI

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