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***Use of spectral analysis for detection of
sedimentary rocks by ETM⁺ data in
Gardaneh Ahovan area.***

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Ahovan area is located in NE Semnan, Iran. The aim is classify map of sedimentary units and the determining the exact boundaries of them through the remote sensing methods. Spectral analysis methods were used for detection of lithology features on a set of ETM⁺ data. Data must be converted from Digital number (DN) pixels format to the reflectance. Then, we used Minimum Noise Fraction, Pixel Purity Index, n-D visualization and the USGS lithology spectral library as the reference spectra and spectral angle mapper, method for this comparison. A shear from north part of area was supplied from resulted image of SAM classification method on sensor ETM⁺ data Landsat to better identify the sedimentary rocks. The exact boundaries of the sedimentary rocks were perfect separaed. First spectra class: ferruginous sandstone, fourth spectra class: shale, fifth spectra class: fossiliferous limestone (a major section), sixth spectra class: arkosic sandstone, seventh spectra class belongs to glauconitic sandstone, that SAM score assigned are 0.439, 0.845, 0.895, 0.916 and 0.854, respectively. Finally, the result quantities methods mentioned above have a high matching with False color composite image, OIF, Band ratio, principal components analysis on the ETM⁺ and ASTER data but with more details.