

The Use of Thermal Infrared Wavelengths to Determine the Volcanic Soils

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Abstract : In this study, an application was carried out to determine the Volcanic Soils by using remote sensing. The study area was located on the Golcuk formation in Isparta-Turkey. The thermal bands of Landsat 7 image were used for processing. The implementation of the climate model that was based on the water index was used in ERDAS Imagine software together with pixel based image classification. Soil Moisture Index (SMI) was modeled by using the surface temperature (Ts) which was obtained from thermal bands and vegetation index (NDVI) derived from Landsat 7. Surface moisture values were grouped and classified by using scoring system. Thematic layers were compared together with the field studies. Consequently, different moisture levels for volcanic soils were indicator for determination and separation. Those thermal wavelengths are preferable bands for separation of volcanic soils using moisture and temperature models.

Keywords : Landsat 7, soil moisture index, temperature models, volcanic soils

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