



Quantifying Fractional Ground Cover on the Climate Sensitive High Plains Using AVIRIS and Landsat TM Data

By Amanda Susan Warner

BiblioScholar. Paperback. Book Condition: New. Paperback. 86 pages. Dimensions: 9.7in. x 7.4in. x 0.2in. The High Plains is an economically important and climatologically sensitive region of the United States and Canada. The High Plains contain 100,000 sq km of Holocene sand dunes and sand sheets that are currently stabilized by natural vegetation. Droughts and the larger threat of global warming are climate phenomena that could cause depletion of natural vegetation and make this region susceptible to sand dune reactivation. This thesis is part of a larger study that is assessing the effect of climate variability on the natural vegetation that covers the High Plains using Landsat 5 and Landsat 7 data. The question this thesis addresses is how can fractional vegetation cover be mapped with the Landsat instruments using linear spectral mixture analysis and to what accuracy. The method discussed in this thesis made use of a high spatial and spectral resolution sensor called AVIRIS (Airborne Visible and Infrared Imaging Spectrometer) and field measurements to test vegetation mapping in three Landsat 7 sub-scenes. Near-simultaneous AVIRIS images near Ft. Morgan, Colorado and near Logan, New Mexico were acquired on July 10, 1999 and September 30, 1999, respectively. The AVIRIS flights preceded...



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