Abstract

Nitrogen is essential factor in monitoring growth of the crops. Nitrogen content differs from one crop to crop. Crops like soybean and corn are capable of fixing more nitrogen content compared to other crops. Hyperspectral images can be used to study variation of nitrogen content in different crops. Indian pines data set collected from Airborne invisible/infrared imaging spectrometer (AVIRIS) sensor is used the study. The image was segmented using existing ground truth data for three different type of crops corn, wheat and soybean. The paper focus on study of variation of spectral indices in three different crops namely corn, wheat and soybean. The nitrogen based spectral indices red edge index (Clred edge), chlorophyll green (Clgreen), red edge Position (REP) was taken for the study. Since crops like soybean and corn are capable of fixing more nitrogen content they exhibit higher spectral values. The red edge index (Clred edge) and chlorophyll green (Clgreen) exhibited higher values in soybean and corn when compared with wheat. Red edge position (REP) exhibit still higher values in crop soybean and corn. Hence spectral indices can be used to study variations of nitrogen in three different set of crops.
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Index Terms

Computer Science               Image Processing
Keywords

Hyper spectral, spectrometer, Imaging, dataset.