Signature studies and classification of forest species using hyperspectral data

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Abstract: Hyperspectral remote sensing uses large number of contiguous bands for discerning the intricate and minute differences among features which are otherwise not discernible using broad bands. An attempt was made to differentiate various forest species and classify them viz. teak, sal, tropical pine, chir pine, ficus, eucalyptus and grass. Spectral separability between various classes has been quantified using measures like spectral distance and spectral angle. Spectral Angle Mapper (SAM) classification technique was attempted for species level classification. The forest species classification accuracy was found to be 88 percent.

Keywords: Hyperspectral Remote sensing, Forest species signatures, Spectral Angle Mapper, Spectral variability.