

CLASSIFICATION OF CLOUDS WITH OBJECT ORIENTED TECHNIQUE

H. Azari^{*a} A. Matkan^a A. Shakiba^a H. Pourali^a

^a Shahid Beheshti University, Remote sensing & GIS Dept., Earth Science Faculty, , Tehran, Islamic Republic of Iran

Technical Commission VII Symposium 2010

KEY WORDS: Cloud Classification, Segmentation, Object Orient, Texture, Pattern, Bi-spectral, Brightness Temperature

ABSTRACT:

Rainy clouds having high densities are the main causes of flood events, therefore detection and classification of clouds can be very valuable for flood forecasting. In this study NOAA/AVHRR satellite images were used for object oriented classification. Sixteen bands were produced and utilized for cloud classification. This included the main five bands of NOAA/AVHRR and other important information like albedo, brightness temperature, solar zenith and azimuth angles, land surface temperature, sea surface temperature, normalized difference vegetation index, deviation of nadir and cloud height. Multi-resolution segmentation and hierarchical classification were performed using the sixteen produced layers. The obtained kappa coefficient and the overall accuracy were relatively high (kappa= 0.887, overall Acc.= 0.905). The results of the study demonstrated that the object oriented classification can be considered as a proper method for cloud detection and classification

TOPIC: Image processing and pattern recognition

ALTERNATIVE TOPIC: Remote sensing applications