



## Target Separability analysis for Resourcesat-1 AWiFS data

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**Abstract:** This paper describes target separability analysis for Resourcesat-1 AWiFS data for a variety of land targets. Maximum radiances for a variety of land targets/features ranging from low reflectance (water) to high reflectance targets (snow) were computed using Resourcesat-1 AWiFS and LISS-4 data. These radiance values were used to simulate the maximum probable radiance values from each of these targets as well as the mean and standard deviations of DN values for these targets using the gain settings of AWiFS sensor. The DN values were plotted in the feature space to study their separability at 99% confidence level. The targets were found to form two broad classes based on high and low reflectances. Among these broad classes, the constituent classes overlapped each other. In view of this, two gain settings for 10-bit quantization have been suggested for better discrimination of land targets.

**Keywords:** Saturation radiance, gain setting, reflectance, standard deviation, digital number