EVALUATION OF RADARSAT STANDARD MODE DATA FOR DETECTION OF DEFORESTED AREAS IN BRAZILIAN AMAZON

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ABSTRACT

Total deforested area in Brazilian Amazon increased from 38 million hectares in 1988 to 52 million hectares in 1996. Monitoring the rapid deforestation growth requires the use of remotely sensed data from various satellites, including microwave imagery. This paper presents an evaluation of Radarsat standard mode data for the detection of deforested areas in a region of Rondônia, in the município of Ariquemes, and Pará, in the município of Santarém. Data acquired in the framework of the ADRO project included S2A, S3A (Rondônia), and S7D (Pará) imagery. Image processing was based on the Iterated Conditional Modes (ICM) classifier that incorporated different probability distributions for treating radar imagery by a multiplicative model, including the $\Gamma^{1/2}$, $K_A$, the $\zeta^0_A$ distributions. Analysis of the data modeled different classes of land-use and land-cover, with emphasis on productive and degraded (abandoned) pastures, recently deforested areas, burned areas, primary and secondary forest.

Key-words: 364, deforestation, Amazon, land use change, Brazil