



National Land Use Monitoring Program in Multi-Temporal Remote Sensing Images

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Change detection allows direct observation of land surface at repetitive intervals and provides important applications in environment monitoring, damage assessment and so on. And Detecting clouds in satellite imagery is becoming more important with increasing data availability, however many earth observation sensors are not designed for this task. Image radiometric normalization has caused problems in previous satellite image change and cloud detection methods is a precondition for deriving land change information of satellite imagery of different dates. To solve the ambiguity in using such resources, this paper proposes a complete change detection method based on iterative histogram and Fuzzy C-Mean which can cope with radiometric normalization, cloud and change detection. It firstly uses Fuzzy C-Mean clustering to dilute the small brightness area even with noise and outliers. And setting a different threshold at each band to find the cloud area. Then iterative algorithm applies the spectrum of invariant area for whole image with histogram matching. A threshold is then applied to difference images between the reference and the matched histogram subject images in order to detect the change areas. The image differentiation and threshold are again applied the updated histogram-matched image to further segment the change and the non-change areas. The creative parts of our approach lie in a three-step detection scheme is proved to be an efficient and effective way to differentiate the change area.