Application of Change Detection Techniques in Monitoring Environmental Phenomena: A Review

Authors : T. Garba, Y. Y. Babanyara, T. O. Quddus, A. K. Mukatari

Abstract : Human activities make environmental parameters in order to keep on changing globally. While some changes are necessary and beneficial to flora and fauna, others have serious consequences threatening the survival of their natural habitat if these changes are not properly monitored and mitigated. In-situ assessments are characterized by many challenges due to the absence of time series data and sometimes areas to be observed or monitored are inaccessible. Satellites Remote Sensing provide us with the digital images of same geographic areas within a pre-defined interval. This makes it possible to monitor and detect changes of environmental phenomena. This paper, therefore, reviewed the commonly use changes detection techniques globally such as image differencing, image rationing, image regression, vegetation index difference, change vector analysis, principal components analysis, multidate classification, post-classification comparison, and visual interpretation. The paper concludes by suggesting the use of more than one technique.

Keywords : environmental phenomena, change detection, monitor, techniques

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