

Use of Landsat OLI Images in the Mapping of Landslides: Case of the Taounate Province in Northern Morocco

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Abstract : Northern Morocco is characterized by relatively young mountains experiencing a very important dynamic compared to other areas of Morocco. The dynamics associated with the formation of the Rif chain (Alpine tectonics), is accompanied by instabilities essentially related to tectonic movements. The realization of important infrastructures (Roads, Highways,...) represents a triggering factor and favoring landslides. This paper is part of the establishment of landslides susceptibility map and concerns the mapping of unstable areas in the province of Taounate. The landslide was identified using the components of the false color (FCC) of images Landsat OLI: i) the first independent component (IC1), ii) The main component (PC), iii) Normalized difference index (NDI). This mapping for landslides class is validated by in-situ surveys.

Keywords : landslides, False Color Composite (FCC), Independent Component Analysis (ICA), Principal Component Analysis (PCA), Normalized Difference Index (NDI), Normalized Difference Mid Red Index (NDMIDR)

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