

Use of spatial Remote Sensing and DEM for the fracturing analysis in the humid mountain in the Rifan chain at the Morocco: Relationship with the distribution of the landslides.

M. Mansour

Urban Institute. Rabat, Morocco.

ABSTRACT

The objectif of this research is to study the geodynamic natural processes in the Rifan alpine chain at the Morocco, is known for its crumblings and landslides in catastrophic matter. Thus from its position in an active structurally and sismically area, the Rif mountain is therefore weakened and predisposed with the many crumblings and observed landslides. Geomorphological information was taken from a morphostructural and morphodynamic map at a scale of 1/20.000. The construction of a DEM in addition to further thematical map products allowed to process further morphometric analysis of the region. At facing the west the slopes submitted to the humid winds of Atlantic origin, appear delivered to mass movement and solifluction, whereas the slopes oriented the East, are submitted to the runoff and erosion. A detailed morphostructural analysis, based upon a multi-source approach coupling the analysis and interpretation of the RADAR images; air-photos and digital terrain model and the compulsory control in the fields, show that the gravitating phenomena of instabilities observed are related to the reactivation of two major systems of active faults. The detailed microtectonic analysis reveals the Plio-quaternary faults reactivation within NE-SW, NW-SE and NS directions.

Key-words: Mass movements, Fracturation, RADAR, Aerial photographs analysis, Model Elevation Terrain, Rif, Morocco.