



## **Spatial analysis of interrill erosion and soil infiltrability in Moroccan Pre-Rif**

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Diagnosis of runoff and erosion hazard in a watershed requires a good understanding of the soil hydrodynamic behavior, particularly the runoff origin and the soil infiltration capacity according to landuse and soil type. The survey of the erosion processes offers a great interest for optimal and sustainable soil use. The main part of this study is to achieve a landuse/landcover mapping to assess the water erosion and to identify the soil infiltration in the Oued Jemaa watershed in the Moroccan Pre-Rif by using the spatial remote sensing data and the geographical information system (GIS). The results of the erosion mapping and the infiltration measurements reveal the importance of soil structure, land use/land cover, field labour manner and of soils types on the water transfers and the consequences on the soil losses. The analysis of field permeability data shows a clear correlation ( $R^2 = 0,70$  to  $0,90$ ) with soil loss, soil texture, percent vegetation cover, landuse and field labour manner. Indeed, the measurements of infiltration confirm the assessments of the soil losses data derived by the USLE model.

Keywords: Water erosion, infiltration, land cover, remote sensing, Morocco