Integration of the Land's Topography for the Improvement of the Spatial Images Classification. Application on the Steppic Area of Aflou (North of Laghouat, Algeria).

Zakaria SMAHI, Abdelkrim BENSAID National Centre of Spatial Techniques BP 13, Arzew 31200, ORAN, ALGERIA Phone: +213 6 47 22 17 , Facsimile: +213 6 47 34 54 E-mail : zakaria_smahi@usa.net

The principal aim of this study is the combination of the image with information given by the files issued from DTM so as to correct the image from the topographic and atmospherics' effects in order to attribute to each object its real reflectance. However, a territory - witness has been chosen in the region of Aflou containing a great variety of vegetable species and presenting a relief with a variation of slopes and a presence of shadow's effects. This region of study is covered by an extracted window of the image Landsat TM of the scene 196/36 of 08 April 1995. In a first time, a geometrical correction has been applied on the image with respect to the DTM.

Therefore, the aim of the realisation of this last as well as its derived files (the slope, the aspect, the shade) is to integrate topographic effects in the process of classification so as to improve the precision of results. In a second time, the image has been corrected by two absolute calibration procedures. Then, a classification by the maximum of likelihood has been applied on the images. Finally, the firsts results indicate clearly that the absolute calibration in flat land has not improved our classification. On the other hand, after elimination the effect of the relief, the classification has been improved of 0.356 %. Thus, we can saying that the topography plays na important cause in the process of the multisource classification when the region of study presents a relief land.

Keywords : DTM, Reflectance, absolute calibration, Topographic and Atmospherics' effects, LANDSAT TM.