

HRPTSOFT: SOFTWARE FOR THE NOAA IMAGES PROCESSING

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The diffusion of the remote sensing techniques that has taken place in the Managerial Group GEOCUBA, has contributed to the inclusion, more and more frequent, of this information source in many of the investigations that are developed inside and outside of the Group. This source of information concentrated on the digital images, cannot be correctly used without the application of the digital images processing techniques.

Images captured by the satellites NOAA are very useful for the environmental monitoring. The software we have for downloading and manipulating these images; are limited for digital processing of these images. That is why software was developed allowing a bigger exploitation of the station and the application of its results in those branches where the remote sensing is useful. The process of obtaining the satellite images is susceptible to errors that can be remarkable in certain occasions. These errors are derived of distortions originated by the platform (the deviations of the satellite orbit); for the rotation, the bend and the terrestrial surface; caused by the sensor; among others. For the correction of these errors, a method has been implemented based on the physical model of the satellite orbit. The rectified image is stored in raster format and BMP format. The work in the software is organized in projects, where the images of interest are included and it is defined the work window in geographical coordinates. The images can be manipulated are those coming from the satellites NOAA 12, 14 and 15, which are functioning at the moment. These satellites support several sensors whose information appears included in the format of the image the station receives. Starting from this information are calculated some physical parameters such as reflectance percent, radiance, reflectance, normalized vegetation index, sea temperature, earth temperature and atmospheric temperature, among others. The calculated physical parameters are stored in files in raster, BMP and text format.

Given the spatial resolution of these images (1,1 km), they are very useful for global, temporal and multi-spectral (6 bands) studies. Also they can be included for raster processing in geographic information systems and for cartographic editions by means of orthophotomaps.