

The UGR starts a study about the water of the Vega of Granada using space remote sensing

2003-10-14 00:00:00

Data about our planet can be obtained from space satellites which would be impossible to obtain at our height, with human sight or conventional photography. Satellites' electromagnetic sensors provide repetitive images of most part of the Earth, including inaccessible areas like polar or desert areas. Remote sensing allows to carry out applications like collecting images of large icebergs and detecting oil spills or fires. Such images provide a global dimension that helps to understand the large processes which affect the environment, like ozone layer or global warming.

Achieving images is not the most difficult part on the scientific work, but their digital treatment and interpreting the results obtained. Computer skills and specialists like [Mario Chica Olmo](#) are essential. He is the director of the RSGIS. Remote sensing, geographic information systems and geostatistics research group of the [Faculty of Sciences](#) of the [University of Granada](#) that has been working with such technology for some years, like in the study of the biogeochemical characterization of the estuary of the Tinto and Odiel rivers (Huelva).

Ahora, in collaboration with the [Institute of Water](#) of the UGR and the [Spanish Geological and Miner Institute](#), will analyse deep and superficial waters of the Vega of Granada, their composition, temperature, chlorophile and bacterias... That is why they have already started to take samples in a number of wells of different properties in the area. The laboratory work will take all autumn. But, in addition, they have several digital images taken by the Landsat, Quickbird and Ikonos satellites, placed in the space several hundred kilometres high. We will know the first results next spring and the final conclusions in two years, when the project is finished.

Landsat satellite orbit is about 705 kilometers high and allows us to observe a 34,000 square kilometer surface in an only image. Certain large radio coverage phenomenons, like those generated by satellites, can only be appreciated in a global perspective. For example, the convexity of the Spanish Meseta was first detected with this advanced technology.

Wide pixels

Thanks to electromagnetic sensors we can observe the Vega of Granada in one of the images at a scale of 30x30 square meters per pixel. [RSGIS](#) group experts can interpretate vegetation, geological materials or superficial water depending on the electromagnetic radiation detected by sensors and reflected by Earth surface materials in the million pixels that form the . "A relation between the situation of hidric and environmental resources situation observed in laboratories and in the Earth's surface can be established", Mario Chica explains.

When possible, remote sensing must be accompanied by other methods of study, like maps or fieldworks. These multithematic tools help to decipher the results of digital images and make a more realistic evaluation. Conforman los so-called geographical information systems (GIS), a really new scientific discipline that, according to Professor Chica, "allows us to build support systems for decision making as regards quality of waters, crops or environment in general".

Further information:

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