



## **Application of Advance Radar Interferometry to study deformations nearby Itoiz and Yesa water reservoirs, Spain**

A. Arjona (1), P. Blanco (2), D. Monells (2), J. Mallorquí (2), and J. Fernández (1)

(1) Instituto de Astronomía y Geodesia (CSIC-UCM), Madrid, Spain (alicia\_arjona@mat.ucm.es, jose\_fernandez@mat.ucm.es), (2) Universitat Politècnica de Catalunya (UPC), D3-Campus Nord-UPC, Barcelona, Spain (pblanco@tsc.upc.edu, mallorqui@tsc.upc.edu, dmonells@yahoo.es)

Satellite Radar Interferometry (InSAR) has been proven to be a useful and powerful tool in tectonic areas for surveying subtle deformations over several years related to geodynamic phenomena. The aim of this work is to study the applicability of an advanced DInSAR technique, the Coherent Pixel Technique (CPT) to detect and quantify the deformation nearby Itoiz and Yesa water reservoir taking advantage of the large amounts of past ERS and ENVISAT acquisitions. We apply this technique to obtain mean velocities and time series of ground deformation. The study has been carried out by employing 22 ENVISAT ascending images concerning the 2003-2008 period, 15 ENVISAT descending images concerning the 2004-2007 period and 50 ERS ascending images concerning the 1996-2008 period.