

STUDY OF THE PRESENT-DAY TECTONICS AND SEISMOGENETIC SOURCES OF THE AL-HOCEIMA REGION (MOROCCO) USING GPS AND MTINSAR

Pablo J. González¹, Mimmo Palano² & José Fernández¹

1. *Instituto de Astronomía y Geodesia, (CSIC-UCM), Fac. Cc. Matemáticas, Madrid, 28040 Spain* pjgonzal@mat.ucm.es; jft@mat.ucm.es

2. *Istituto Nazionale di Geofisica e Vulcanologia. Sezione di Catania. Piazza Roma 1, Catania, Italy.* palano@ct.ingv.it

Geodetic analysis and modeling of ground deformation data is a valuable tool that allows constraining present-day tectonics deformation styles and its implications on the related seismic hazard. We re-analyzed the survey GPS data available from the Nubian and Iberian (Eurasian) plate boundary to develop surface strain maps. We also study a high non-linear deformation time series spanning the coseismic signal due to the 24 February 2004, Mw 6.3, Al-Hoceima (Rif, Morocco) using a multitemporal interferometric synthetic aperture radar (MTInSAR) technique. The study of temporal non-linear signals using MTInSAR analysis has been challenging due to the problem of intrinsic temporal smoothing of such multibaseline techniques. We used StaMPS/MTI with minimum temporal smoothing parameters and we retrieve time series of LOS deformation. Applying a posteriori temporal smoothing (atmospheric filtering) to the pre- and postseismic subperiods of the time series, we obtained a filtered time series that show the clear step-wise coseismic signal and a persistent signal during the postseismic period. We present preliminary modeling results and we discussed them in the light of the GPS-derived strain maps.