



New A-DInSAR study of La Palma, Canary Islands, Spain. Results and interpretation.

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We present new results on the deformation field for La Palma Island in the Canary Archipelago using the complete archive of Envisat (2004-2010). The recent volcanic activity registered in La Palma (at historical and subhistorical times, there have been seven eruptions, in ca. A.D. 1480, 1585, 1646, 1677, 1712, 1949 and 1971) and the absence of any geodetic monitoring system implemented in the Island at the 90's converts A-DInSAR studies in an basic information source for the study of surface displacements. From late 90's several geodetic studies using GNSS, gravimetry and InSAR techniques has been carried out in the island (see Fernández et al., 2015 for a summary). We improve previous radar satellite results by increasing the temporal coverage and using more images, which generates a greater interferogram set, and using a recently developed A-DInSAR processing technique which includes an error estimation for the LOS mean velocity and deformation time series ("Subsidence" software, developed by the "Universitat Politècnica de Catalunya, see e.g., Blanco-Sánchez et al., 2008, and Centolanza, 2015). Our A-DInSAR results are compared with previous InSAR ones and with GNSS results obtained from campaigns. A discussion and interpretation of the results is also presented. Radar images have been provided by ESA through Cat.-1 13933 project.