



The Eurorisk-Preview project: earthquake prone areas monitored by means of ENVISAT and ERS data

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The first and foremost objective of Eurorisk-Preview (Prevention, Information and Early Warning) is to develop new or enhanced information services to support the management of risks, mainly intended for the European Civil Protection Units and local or regional authorities. As far as earthquake risk is concerned the project provides three products and services: the co-seismic displacement pattern, the surface mean velocity map and the damage detected map. A multidisciplinary analysis integrating the geophysical and seismological data at local scale and remote sensing results has been performed. To this purpose two test sites have been identified: the Western sector of the North Anatolic Fault System (NAFS) and Istanbul city (in Turkey) and Lefkada and Kefhalonia islands (in Greece). The use of Differential SAR Interferometry (DInSAR) for surface displacement detection is a well known remote sensing approach for seismic studies. DInSAR has been applied to recent moderate and strong earthquakes such the Umbria-Marche earthquake sequence (Italy, 1997), the Izmit earthquake (Turkey, 1999) and the Bam seismic event (Iran, 2003). An important development is the interferogram combination allowing the monitoring of the temporal evolution of the deformation of the study area. We present the preliminary results and analysis concerning the use of two techniques, the SBAS (Small Baseline Subset) and the SU-DIFSAR (Sparse Unwrapping Differential SAR). Concerning damage detection a multisensor approach based on the integration of SAR and optical (high and medium resolution)

satellite data has been used to provide a draft map of damage affecting man made structures. To let available these products a WebGIS system has been developed.