

Preliminary analysis of a correlation between ground deformations and rainfall: the Ivancich landslide, central Italy.

F. Ardizzone ⁽¹⁾, M. Rossi ⁽¹⁾, G. Fornaro ⁽²⁾, R. Lanari ⁽²⁾, M. Manunta ⁽²⁾, A. Mondini ^(1,3), G. Zeni ⁽²⁾, F. Guzzetti ⁽¹⁾

1. CNR-IRPI, Perugia, PG, Italy.

2. CNR-IREA, Napoli, NA, Italy.

3. Dipartimento di Scienze della Terra, Università degli Studi di Perugia, Perugia, PG, Italy.

We present the results of a preliminary comparison between ground deformation time series obtained using the SBAS-DInSAR technique in the period 1992 - 2010 and daily rainfall records, in the area of the Ivancich landslide, Assisi, central Italy. We investigate the ground deformations exploiting full-resolution analysis results obtained from the multi-temporal Differential Synthetic Aperture Radar Interferometry (DInSAR) technology applied to ascending and descending SAR data acquired by: (i) the European Remote Sensing (ERS-1/2) satellites from 1992 to 2000, and (ii) the Envisat-ASAR satellite from 2003 to 2010. We then compared the deformation time series to the daily rainfall record for a representative rainfall station in the study area. Results are used to investigate the relationships between landslide surface movements and seasonal rainfall.