



## **Interferometric Techniques Apply to Gemona (Friuli-Italy) Area as Tool for Structural Analysis.**

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We suggest a possible exploitation of radar interferometry for estimating many features of the brittle deformation occurring at the very surface of the Earth, such as, for example, the length of the dislocation front, the total amount of the dislocation, the dislocation rate over the time interval considered. The Interferometric techniques allows obtaining highly reliable vertical velocity values of the order of 1 mm/yr, with a maximum resolution of 80m<sup>2</sup>. The values obtained always refer to the temporal interval considered, which depends on the availability of SAR images. We demonstrate that is possible to see the evolution and the behaviour of the main tectonic lineament of the considered area even on short period of time (few years).

We describe the results of a procedure to calculate terrain motion velocity on highly correlated pixels of an area nearby Gemona – Friuli, Northern Italy, and then we presented some considerations, based on three successful examples of the analysis, on how to exploit these results in a structural-geological description of the area.

The versatility of the technique, the large dimensions of the area that can be analyzed (10.000 km<sup>2</sup>), and the high precision and reliability of the results obtained, make radar interferometry a powerful tool not only to monitor the dislocation occurring at the surface, but also to obtain important information on the structural evolution of mountain belts, otherwise very difficult to recognize.