

EGU2020-10549

EGU General Assembly 2020

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## Surface Deformation in Northeast Italy by using time series InSAR techniques with Sentinel-1 data

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Geodetic data provide useful information on surface deformation over long period of time. Applying time series methods to geodetic data, several phenomena were studied. In particular, the potentials of geodetic data were exploited to detect and measure slow tectonic signals such as interseismic strain accumulation. During the interseismic period, when the faults are locked, an accumulation of deformation can occur in response to active tectonic stresses. Considering that such energy can be released through earthquakes, the estimation of surface deformation and the long-term strain rate reveals itself a useful approach for seismic hazard investigations. In this study, we used remote sensing Synthetic Aperture Radar data to evaluate the ground deformation in the Southeastern Alps (Northeastern Italy), an area characterized by an active convergent regime (Adria plate motion is  $\sim 2\text{mm/yr}$ ) as well as several active tectonic structures. We used SAR images provided by Sentinel-1A/B satellites spanning the 2015-2019 temporal interval by applying the multi temporal Small Baseline Subset Interferometry (SBAS) technique. The method is based on a combination of a large number of interferograms characterized by small temporal and geometric baseline in order to reduce decorrelation effects and increase the spatial coverage over the area of interest. The outcomes consist of displacement time series and a mean ground velocity map for each coherent pixels with respect to the satellite Line-of-Sight (LoS). Some detected patterns can be attributed to subsidence phenomena, affecting the plain in the area under analysis, and due to the compaction of the sediments.