



Clues on active differential uplift across the Giudicarie belt (Central-Eastern Alps, Italy) by means of PSInSAR data

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The Permanent Scatterers Synthetic Aperture Radar INterferometry (PSInSAR) methodology provides high resolution assessment of surface deformations (precision ranging from 0.8 to 0.1 mm/year) over long periods of observation. Hence, it is particularly suitable to analyze surface motion over wide regions associated to a weak tectonic activity. For this reason we have adopted the PSInSAR technique to study regional movement across the Giudicarie belt, a NNE-trending thrust belt oblique to the Southern Alpine chain and presently characterized by a low to moderate seismicity. Over 11,000 PS velocities along the satellite Line Of Sight (LOS) were calculated using images acquired in descending orbit during the 1992–1996 time span. The PSInSAR data show a differential uplift of around 1.4–1.7 mm/year across the most external WNW-dipping thrusts of the Giudicarie belt (Mt. Baldo, Mt. Stivo and Mt. Grattacul thrusts alignment). This corresponds to a horizontal contraction across the external part of the Giudicarie belt of about 1.3–1.5 mm/year.