



## **Large-scale tectonics in western Anatolia from time series InSAR**

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Anatolian continental crust is continuously undergoing strain due to the collision of three major tectonic plates: the Eurasian, African and Arabian. This makes it one of the most rapidly deforming regions in the world. It is extruded towards the Hellenic Trench along the dextral North Anatolian and sinistral East Anatolian fault zones (NAFZ and EAFZ respectively). Recent GPS studies show slip rates of  $\sim 24$  mm/yr along the NAFZ,  $\sim 9$  mm/yr along the EAFZ and an extension of  $\sim 25$ - $30$  mm/yr in the western part of Anatolia.

Here we focus on a part of West Anatolia where the tectonic regime changes from strike-slip tectonics to extensional tectonics, from the north to the south of the NAFZ. Using a relatively new geodetic technique, persistent scatterer InSAR, we obtain better spatial resolution than previous studies. This enables us to further constrain the magnitude and extent of the deformation. Our satellite line-of-sight velocity field is derived from descending ERS 1/2 acquisitions between 1992 and 2000, over a 450 by 100 kilometer area. This includes major cities such as İstanbul and Bursa, which are in the vicinity of the NAFZ and could be subjected to a strong magnitude earthquake in the near future. We compare our results with GPS studies within the region and apply simple kinematic models for the strain distribution along, and in the vicinity of, the major fault zones.