



GPS deformation rates in the Bajo Segura Basin (NE of the Eastern Betic Shear Zone, SE Spain)

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The Bajo Segura Basin, located in the NE end of the Eastern Betic Shear Zone, is one of the areas with highest seismic activity of the Iberian Peninsula. It is bounded by the Crevillente Fault to the north and the Bajo Segura Fault to the south, and it is characterized by a Late Miocene to Quaternary folded cover. We estimate the present-day deformation of the study area from a GPS network with 11 sites. Observation campaigns were carried out four times (June 1999, September 2001, September 2002 and September 2013). We used the 6.2 version of GIPSY-OASIS software to process GPS data in Precise Point Positioning mode (PPP). In order to obtain the position time series in the whole period of these episodic campaigns, all the GPS observations from 1999 to 2013 campaigns were processed with an identical standard procedure. We compared our velocity field estimation with respect to GEODVEL tectonic model to obtain the residual velocity field of the Bajo Segura Basin. We estimated a \sim N-S shortening with deformation rates varying between 0.2 and 0.6 mm/yr. These results are consistent with local geological deformation rates although slightly higher. They also fit well with regional geodetic data estimated for the Western Mediterranean.