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Geodetic measurement of tectonic deformation in the eastern part of the Betic Cordillera, Spain

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We seek to quantify recent tectonic deformation of Eastern Betic Cordillera from GPS data and also to make a synthesis of the geological structure, historical and instrumental seismicity, and geodetic studies in the Western Mediterranean. To estimate horizontal strain rate in South East Spain, we use GPS measurements performed in 1999, 2001 and 2002. This area is in a convergence zone between the Eurasian and the African plates. Recent deformation, during the Quaternary, observed along major tectonic accidents as the Crevillente fault and the Bajo Segura fault, shows recent activity. The use of a dense GPS network of 11 stations observed in 3 campaigns of 6 days in the years 1999, 2001 and 2002 could not show any significant displacements. An upper bound of the horizontal strain could be proposed which is smaller than 3 mm/year (after Borque, 2008) and 10 mm/year (our study).