



Plate Boundary Deformation at the Strait of Gibraltar Area from GPS episodic surveys and CGPS: preliminary results

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Since the mid 90's, San Fernando Naval Observatory has been studying the kinematical behaviour of the plate boundary zone located at the Western Mediterranean Sea, Strait of Gibraltar and the Gulf of Cadiz. The studied area is limited to the north by the 'Cadiz - Alicante' Fault, and the Betic Mountains, extended to the Balearic Island through the Mediterranean Sea. The southern limit to the area should be the Atlas Cordillera and the Maghrebides Mountains. This area is part of the broad plate boundary zone accomodating the relative motion between the two big plates. Deformation in the area is mainly concentrated in the Alpine ranges, i .e. Betic, or Maghrebides, with a clear regime of compression and shortening, while rigid undeformed sedimentary basins are also found, i. e. Algerian Basin. After conducting some episodic GPS surveys in the area, the location of a Continuous GPS receivers network provide us with a more complete view of the tectonic displacements. Furthermore other CGPS were installed in this zone for different institutions. We have calculated absolute displacements at the GPS stations from the analysis of the data set collected. We are building a deformation model to understand the kinematic model. In this work we are showing velocity vectors from the solutions of the surveys and a preliminary overview of the deformation model that we are deriving from those displacement vectors.