

Horizontal velocity field deduced from permanent and non-permanent GPS data for Egypt.

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Permanent and non-permanent GPS data were used to estimate a velocity field for the northern corner of Africa continent, which characterized by lack of GPS observations. 16 permanent stations in addition to more than 40 non-permanent stations covering the whole Egyptian territory for the last six years (2006-2012) were used, for the first time, in order to studying the recent crustal movement in Egypt, in local scale, and the interaction between the African, Arabian and Eurasian plates, in large scale.

In addition to the Egyptian stations, permanent and non-permanent, and to achieve the aim of this work, 48 IGS stations belong to three different tectonic plates were processed using Bernese V. 5.0 applying the up to date IGS products and the latest ITRF reference frames (ITRF2008). CATS was used to assess the achieved results and to get a realistic error estimation. This work intended to be the first comprehensive analysis of the permanent stations in addition to non-permanent stations. We present the present date of the absolute horizontal velocities in ITRF2008, and the relative motion between northern Africa with respect to Eurasian and Arabian plates.