



Data Analysis of cGPS stations in central Greece: station velocities and 1-D strain estimates

Athanassios Ganas (1), Konstantinos Chousianitis (1), and Michalis Giannou (2)

(1) NATIONAL OBSERVATORY OF ATHENS, INSTITUTE OF GEODYNAMICS, 11810 ATHENS, Greece
(aganas@gein.noa.gr, +30 210 3490180), (2) TIMATOLOGIO S.A. (Hellenic Cadastre), Athens, Greece

We processed 30-s GPS data from permanent GNSS stations in central Greece, available at NOA since 2006. We obtained position time series along with horizontal and vertical velocities using the Kalman filtering approach and accounting for time-correlated noise content. The station distribution allowed us to draw velocity profiles and to calculate rates of baseline length change (1-D strain). In central Greece, the coherent picture of the velocity pattern for Attica and north-eastern Peloponnese (Corinth) stations (effectively a velocity “plateau” at 30 mm/yr) indicates that these areas belong to the same crustal block, although some internal strain is present within Attica’s crust as well as across the Saronic Gulf. Our 1-D strain estimates are in general agreement with geological data (fault slip rates) in central Greece, implying accommodation of this crustal extension along E-W striking active normal faults. Some NE-SW directed shortening is mapped in the wider area to the west of the termination of the North Anatolian Fault (Sporades islands).