



Crustal deformation field in the eastern Mediterranean determined from 10 years of GPS measurements

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The eastern Mediterranean forms the seismically most active region of the Alpine-Mediterranean plate boundary. In addition to the relatively slow counterclockwise rotation of the African plate, rapid motion of the Anatolian-Aegean region is encountered, directed towards west-southwest, relative to the Eurasian plate. In this paper, we present results of the analysis of 10 year records of continuous GPS (CGPS) time series and campaign-type GPS measurements of crustal motion in Greece. In addition to the GPS networks in Greece, 54 IGS and EUREF stations were included in the processing to ensure a consistent reference frame. A detailed kinematic and strain rate field is being presented as a contribution to a better understanding of the ongoing deformation processes in the eastern Mediterranean. Apart from long-term rates of crustal motion, emphasis is being placed on the time-dependent behaviour of crustal deformation, visualized by means of time series, trajectories and the evolution of cumulated strain. Striking tectonic features being discussed are co-seismic displacements of several centimeters associated with the Lefkada 2003 earthquake, and arc-parallel extension along the Hellenic arc. First indications of height changes are also being presented.