# Modeling co-seismic deformation of the Ms=6.2 June 15, 1995 Aigion earthquake (Greece) based on SAR interferometry

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**Abstract**

The rift of Corinth is one of the world's most rapidly extending continental regions and it has one of the highest seismicity rates in the Euro-Mediterranean region. Consequently, because of this intense tectonic activity,a great interest arises, when it comes to defining the distortions, which are caused in the area.
On June 15, 1995 a strong earthquake, Mw=6.1, with an epicenter about 12 km to the NNE of Aigion, under the northern coast of the Gulf, caused severe damages in the city of Aigion and casualties. Three E-W striking en echelon normal faults, Psathopyrgos, Aigion and Helike, traverse the southwestern part of the Gulf, that suffered the most damages. Ground displacements, observed along the Aigion fault and its position, within the epicentral area, make it the most prevalent fault in producing the earthquake.

Regarding to previous studies, we aim to re-estimate the model of the deformation by taking advantage of the use of a new program and simultaneously evaluate its benefits. For this purpose, SNAP software, provided by the European Space Agency, was used for the new processing. For the analysis of the deformation field, all available ERS images of both ascending and descending tracks, were used, to generate the co-seismic interferograms. SRTM DEM was applied, for the topographic correction. The finest interferometric pairs, in terms of good coherence, have been chosen for the methodology.

Finally, assuming that the earthquake slip can be modeled by a dislocation on a rectangular fault in an homogeneous elastic half-space the best fitting model of the fault, was calculated, by inversion of the average deformation field.

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