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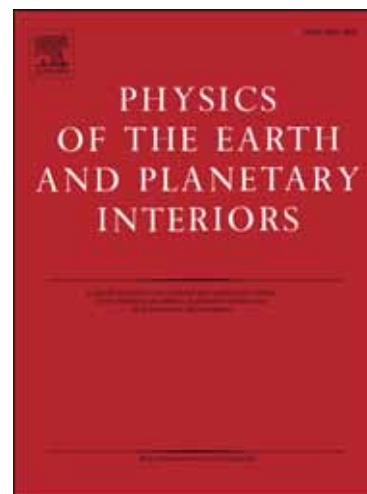
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Upper crust seismic anisotropy study and temporal variations of shear-wave splitting parameters in the Western Gulf of Corinth (Greece) during 2013.

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Abstract

During 2013, the Western Gulf of Corinth (WGoC, Central Greece) experienced a period of increased seismicity, with a total of over 4700 earthquakes. This fact in combination with the existence of dense seismological networks provided an excellent opportunity for the study of crustal seismic anisotropy. Of special note is the seismic crisis period of May – October, during which the main feature was the occurrence of the Helike seismic swarm. Polarigrams and hodograms were employed to analyze local waveforms. This method resulted in 659 measurements of shear-wave splitting parameters, namely the direction of the fast shear-wave (S_{fast}), the time-delay (T_d) between the two split shear-waves and the source polarization direction. A pattern of a general WNW – ESE anisotropy direction, parallel to the GoC's fault systems' strike, is established, with the exception of two stations located in adjacent areas at the north. This is in agreement with the existence of fluid-filled microcracks, oriented according to the regional stress field. The obtained splitting parameters are compared to the results of other anisotropy studies performed in the WGoC. A detailed analysis of the temporal evolution of the normalized time-delay (T_n) was

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