



SKS splitting measurements and shear wave anisotropy in the upper mantle beneath the Aegean

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Shear wave splitting measurements from SKS phases recorded in the Aegean region have been analyzed for fast polarization directions and delay times to investigate upper mantle anisotropy. SKS phases were analyzed from teleseismic events, observed at epicentral distances of the range $85^{\circ} - 120^{\circ}$ and recorded at a temporary and a permanent network, to ensure that splitting of these phases is caused only by the receiver-side anisotropy. The temporary EGELADOS network covers the South Aegean region from Peloponnesos to western Turkey. Successive deployments resulted to a total of 54 stations with data from late 2005 till now. At least 14 events that have been recorded by this network have been qualified till now for SKS splitting analysis. Measurements were also used from the permanent backbone network that spans the entire Aegean-Greek region. The same events were analyzed using 25 stations from the National Observatory of Athens Hellenic Broadband Seismic Network (HL), 7 stations from the GEOFON Network (GE) and 1 from the MedNet Network (MN). Initial results show no homogeneous splitting parameters over the Aegean. Delay times are larger to the northeastern Aegean Sea and the Dodecanese islands. Little anisotropy is observed in continental Greece, whereas intermediate values are observed in the central Aegean and Crete. Fast polarization directions of anisotropy are generally correlated well with active faults and GPS displacement vectors relative to a stable Eurasia, except from areas in the Dodecanese islands and the Peloponnesos. These splitting

measurements assume a single horizontal anisotropic layer which is a poor approximation to the wedge-shaped upper mantle in the Hellenic arc. Future investigation will include inverting the obtained splitting parameters for more complex anisotropy models. This study will be complimented with the addition of ~ 90 deep and ~ 20 shallow events from 2001 to 2005 that have been recorded by the permanent network.