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## Vertical constraint on mantle anisotropy from shear wave splitting in the Isparta Angle, Turkey

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The Isparta Angle in southwestern Turkey is the terrestrial expression of the off shore intersection of the Hellenic and Cyprian arcs. It has been suggested that there is a tear in the down-going lithospheric slab. If a tear does exist, it will be evidenced in the mantle flow beneath the angle. When shear seismic waves travel through the mantle they can become polarized in the direction parallel to flow. On a three component seismometer, the S-wave will be recorded earlier on the horizontal component corresponding to the polarization direction. The time between the polarized and non-polarized horizontal components and the direction of polarization are both computed and plotted on a map. We are interested in the polarization directions to determine the direction of flow beneath the Isparta Angle. We studied two different types of shear waves. We analyzed local events with a maximum depth of 250 km. We also analyzed SKS events in which shear waves travel through the entire mantle and into the outer core, meaning that the flow or anisotropy causing splitting could be anywhere in the mantle. By comparing our local results that are confined to the upper 250 km of the mantle and the SKS results we have found that there is a large jump in lag time somewhere beneath 250 km. We found the average lag time for local events to be about 0.6 seconds whereas the SKS average about 1.9 seconds. This means the majority of anisotropy is in the lower portions of the mantle. Data for this research is being collected by a temporary array of seismic stations deployed around the Isparta area. The project is a NSF funded collaboration of the University of Missouri-Columbia, Kandilli Observatory-Istanbul, and Suleyman Demirel University-Isparta.