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Upper mantle anisotropy obtained from SKS analysis in Kerman province, South-Central Iran.

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Recently, studying anisotropic properties has become a proper procedure to survey rate of tectonics phenomena in upper crust and mantle. Therefore, analyzing specific phases of the wave that an earthquake produces, which is intensely sensitive to both earthquake mechanism and any anisotropy along the path at upper crust, is worthwhile. Researchers consider anisotropy in the upper mantle mainly as a result of olivine crystals which have been aligned by mantle flow. Whenever a shear-wave reaches the anisotropic media; it splits into two directions called fast direction and slow direction. Parameters which describe splitting are the fast polarization direction (φ) and the lag time between fast and slow shear-waves (dt). We applied SKS phase and probe optimized results by using cluster analyzing method, which Teanby et al. (2004) established basis on splitting correction method of Silver and Chan (1991) .Unlike Silver and Chan (1991), Teanby et al. (2004) made the selections of analyzing windows automate. In sum the method is consist of three steps: First φ and δt are calculated for a range of start and end times, and 2D diagram of φ versus δt are plotted. Second stable region, where have tight clusters or have desired compaction are specialized by cluster analysis. Finally optimized clusters are applied and the window which has the least error in evaluation of φ and δt are determined. We select teleseismic data which the S waves which lie inside the so called shear wave window have to be considered as diagnostic for the inference of the anisotropic properties of the medium. This research is based on analyzing shear wave splitting by use of SKS phase to measure anisotropy at upper mantle in Kerman province. Teleseimic data is resulted by four stations in Kerman province of broad band seismic network, assembled by Iranian Seismological Center. We determined shear-wave anisotropy parameters in upper mantle in Kerman province that has been mainly surrounded by the Uromieh-Dokhtar Magmatic Arc (UDMA) the Sanandaj-Sirjan Zone (SSZ) and coincide with the convergence between Arabian and Eurasian plates effects and is approximately conformable with plate kinematics in middle east considering by GPS measurements (Vernant et al.2004).