



## **Crustal anisotropy in southern California**

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Shear wave splitting measurements were made for local earthquakes in southern California at incidence angles larger than the critical incidence angle. For the region of San Bernardino Mountains, the fast polarization directions vary strongly, but are consistently fast for directions roughly perpendicular to the ray paths. This observation is most readily explained by transverse isotropy with a vertical symmetry axis, and is probably associated with horizontally foliated gneisses or schists in the upper crust. Other measurements show a predominance of north-south fast directions, while some data have fast directions that are parallel to the San Andreas fault. These observations are related to azimuthal anisotropy as found in other local shear wave splitting and SKS splitting studies. Most studies on crustal anisotropy have used S-waves arriving within the so-called 'shear-wave window'. In this case azimuthal anisotropy is most easily detected. This study indicates that transverse isotropy may also be determined if the analyzed data are not restricted to small incidence angles.