

Effect of regional variation of seismic anisotropy on surface waveforms

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Seismic anisotropy, which is attributable to the preferred orientation of minerals in the upper mantle, is characterized by intensity and direction. In this study, we examine how regional change of the direction of seismic anisotropy has influence on long period surface waveforms and their amplitude spectra. Results are summarized as follows. Quasi-Love wave, which is excited by toroidal-spheroidal coupling through the seismic anisotropy, appears in the Love wave arrival window on the vertical and radial components of surface wave seismogram. If the surface wave arrives at a seismic station after propagating through an anisotropic region, then the quasi-Love wave can be observed irrespective of whether the station is in isotropic or anisotropic region.