

SSS015-01

Room: Function Room A

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Anisotropic medium structures of the crust and mantle wedge in southern Kii peninsula

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We estimate anisotropic medium structures of the crust and mantle wedge in southern Kii peninsula by shear-wave splitting analysis. Seismograms of micro-earthquake, obtained from June 2009 to January 2010 by Earthquake Research Institute (ERI), Japan Meteorological Agency (JMA) and National Research Institute for Earth Science and Disaster Prevention (NIED), are used to analyze shear-wave splitting. A retrieval scheme by Silver and Chan (1991) is used to determine the azimuth of the fast polarization direction and delay time of the split shear wave. We obtain the fast polarization direction parallel to the direction of the maximum horizontal compressive stress in the crust. This suggests that anisotropy in the crust is controlled by the regional stress. The depth variations in delay time show an existence of anisotropic medium in the lower crust and/or mantle wedge. This possibly indicates a prefer orientation of micro-cracks to the direction of plate strike in a generated region of deep low-frequency tremor.

Keywords: shear wave splitting, anisotropic medium structure, Kii peninsula, mantle wedge, crust, deep low frequency tremor