



Receiver Function Analysis of Strong-motion Stations in Kaohsiung-Pingtung area, Taiwan

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The Kaohsiung City and Pingtung County are located in southern Taiwan and bounded on the west side by several active faults. The shallow velocity structure of thick alluvium basin in this area should be delineated to understand the seismic site effect of strong ground motion. Receiver Function (RF) is a conventional technique for studying the structure of the crust and upper mantle beneath the seismometer. But, the RF analysis of high-frequency acceleration seismograms is also proved to be feasible for estimating shallow structures recently. This study applied the RF technique on the Strong-motion records of almost one-hundred TSMIP stations in Kaohsiung-Pingtung area to estimate the shallow shear-wave velocity structures. The averaged RFs of all stations exhibit the obvious variation because of the different geologies and site conditions. After the forward modeling of RFs based on the Genetic Algorithms (GA) searching, the shallow shear-wave velocity structures beneath all the strong-motion stations in the Kaohsiung-Pingtung area were estimated to delineate the iso-depth contour maps of the main formation interfaces and a preliminary shallow 3D velocity model.