Geophysical Research Abstracts, Vol. 7, 07141, 2005 SRef-ID: 1607-7962/gra/EGU05-A-07141 © European Geosciences Union 2005



S-Wave Velocity Structures of the Chia-Yi Area, Taiwan, Estimated from Array Records of Microtremors.

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We conducted array measurements of microtremors to obtain an overall view of shear wave velocity structure at the Chia-Yi area, Taiwan. The dispersion curves of Rayleigh-wave are calculated using the F-K method (Capon, 1969) and then the S-wave velocity structure of this area are estimated by the surface wave inversion technique (Herrmann, 1991). According to the F-K spectrum, in frequencies lower than about 1 Hz that propagation direction are concentrated in the northwest and southwest quadrant. It may be generated by the effect of the Taiwan Strait on the coast. Furthermore, the shallow velocity structure (0~1500m) can be roughly divided into 4~5 layers and their S-wave velocities decrease from east to west. The depths of the alluvium gradually increase from the east to the west. The results are in good agreement with the available geological information at the area.