

## Two-dimensional crustal structure in southern Taiwan inferred from the 2005 temporary seismic observation

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Two-dimensional crustal structure beneath southern Taiwan has been determined using selected earthquake data obtained by a high-densely on-land seismic array. The Taiwan area is located in the site of an ongoing arc-continent collision boundary between the Eurasian and the Philippine Sea Plates with a convergent rate of about 7 - 8 cm/yr. Around Taiwan, the interaction of this collision is complicated and gives a rise to a very complex tectonic structure and crustal activity including high seismicity. One of the major tectonic features is an orogenic process in the Taiwan Island. And some of the tectonic models has been proposed, however this discussion about the models has been argued.

We deployed a land-across seismic array in southern Taiwan from March to May 2005, to clarify complex crustal and upper mantle structure as one of the constraint on continuous discussion of the tectonic model in Taiwan. Lateral structural variations in the upper crust, as also evident from surface geology, are responsible for the observed large travel time residuals. These are observed in this temporary seismic array.

The result of tomographic inversion of Crustal structure using the selected earthquake data obtained by the temporary array data shows large lateral variation in  $V_p$  Velocity structure. The most prominent feature of the result is the thickening of crust under mountain area in the Central Range, which means that there is large zone with P-wave velocity of around 6.0 km/s at a depth range of 7 - 23 km. Additionally, estimated P-wave velocity In the shallower part of the mountain area is 4.5 - 5 km/s.

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