

# **The Seismotectonic Structures of the Chukou Fault from Studying Microearthquakes**

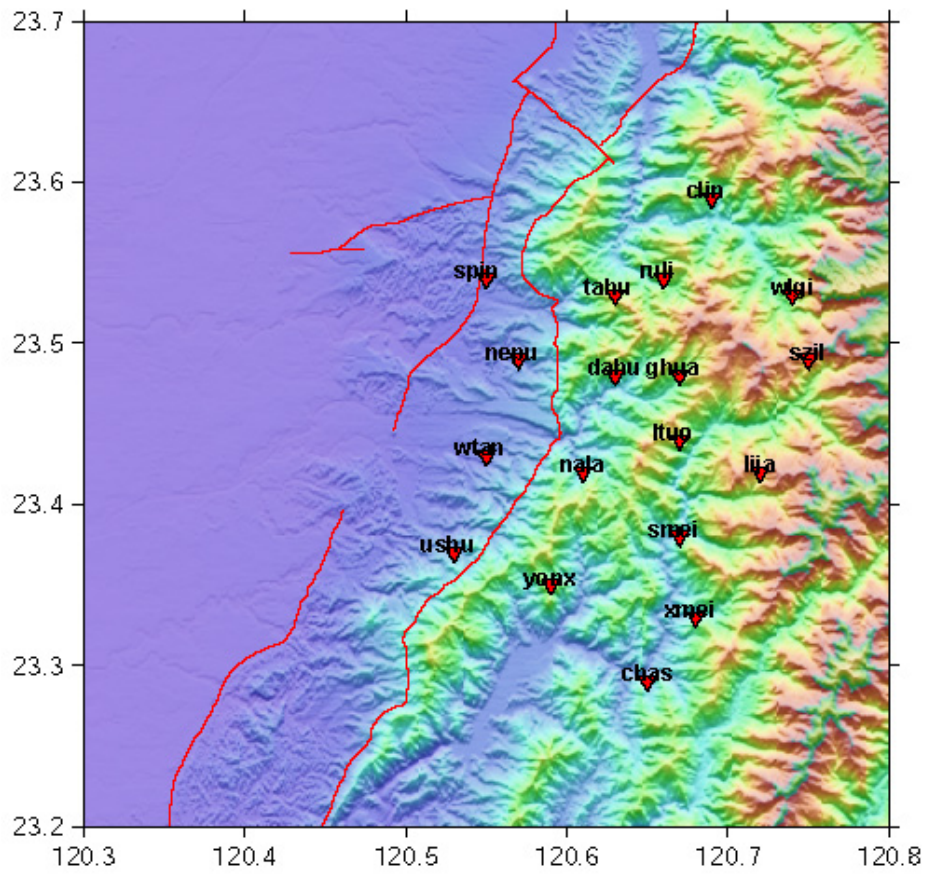
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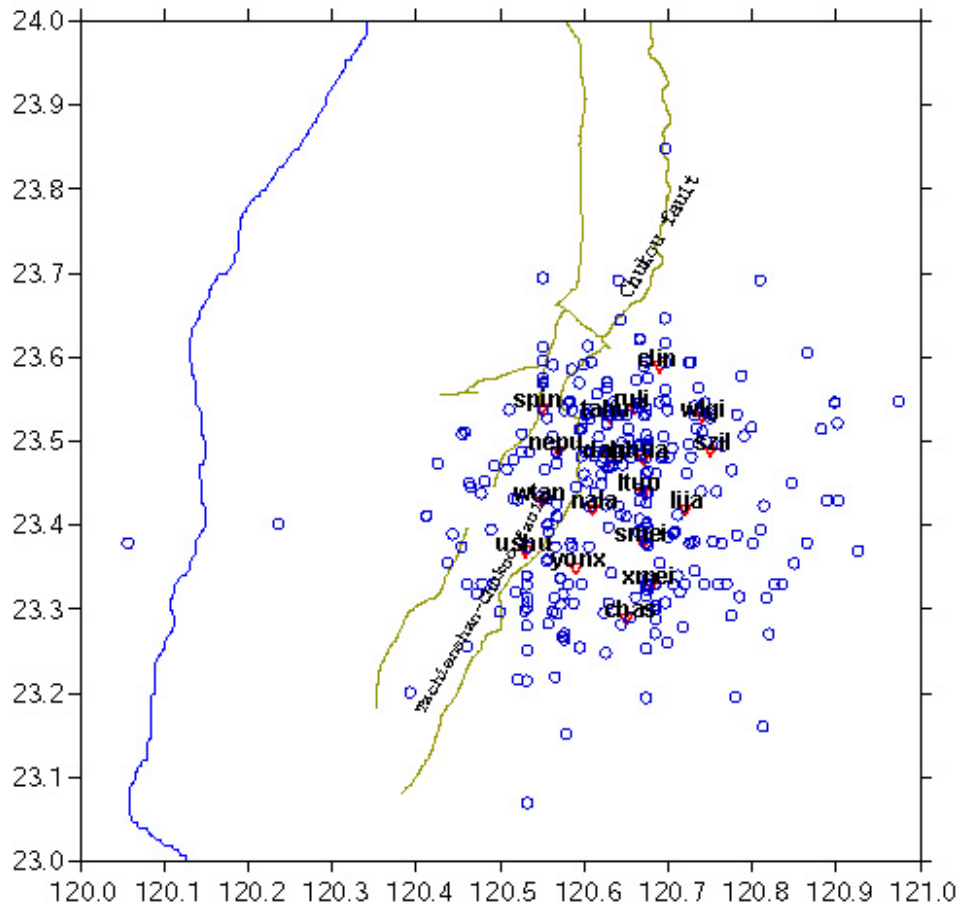
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## **Abstract**

The Chukou fault is a well-know active fault in the Chia-Nana area. However, the seismotectonic structures of the fault are not fully understood. We have carried-out a three-year project to deploy a high-density broadband seismic network to investigate the seismotectonic structures of the Chukou fault. Currently, there are 18 broadband seismic stations deployed in the Chukou fault region (Figure1). Figure 2 shows the epicenters of microearthquakes recorded by the network in the time period between 10/2003 to 12/2004. The first part of this research is to used the HYPODD method to relocate earthquakes, which help us to have better knowledge about the degree of correlation between the seismicity and the Chukou fault as well as the geometry of the Chukou fault. The second part of this research is to obtain more precise focal mechanism of microearthquakes. A waveform modeling and moment tensor inversion tool developed by Zeng and Anderson (1995) are applied to determine the focal mechanisms of microearthquakes and the orientation of P and T axes. Using the orientation of the P and T axes obtained from the moment tensor solution will allow us to have better understanding the faulting style of the Chukou fault and regional tectonics.



**Figure 1: Locations of broadband seismic stations deployed along /near the Chukuo fault, which are denoted by inverted triangles.**



**Figure 2: The epicenters of microearthquakes (represented by circles) recorded by the network in the time period between 10/2003 to 12/2004.**