

0.1満点地震観測による鳥取県西部地震震源域での発震機構解の特徴（序報）

"0.1 Manten" hyper dense seismic observation for a sight of crustal activity –preliminary result about focal mechanisms around source fault hosting the 2000 Western Tottori EQ (M7.3) –

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Weakening process of the crust is an important key for understanding of crustal dynamics. Earthquake faulting is a phenomenon of inelastic deformation taking place within seismogenic zone and its occurrence is affected by stress condition of the crust. Non-uniform co-seismic slip on the large earthquake faulting produces a spatially heterogeneous stress field around the fault. Therefore, a response of stress field to stress perturbation induced by large earthquake occurrence is important and provides a new insight toward crustal strength.

High-resolution focal mechanisms for small earthquakes illuminate stress field in detail. The accuracy of focal mechanism estimation strongly depends on coverage of station above a hypocenter. Therefore, we have developed a new seismic observation system for long-term recording and deployed one thousand stations in an aftershock area of the 2000 Western Tottori earthquake (M7.3). Through this dense seismic network, an accuracy in focal mechanism solution is expected to be smaller than five degrees.

Earthquakes with magnitude greater than 2.0 occurred at the center of the network have been detected. The focal mechanisms were determined with accuracy less than a few degrees. These solutions showed the earthquakes were not always pure double couple source radiation pattern, suggesting fault of the small earthquake non-uniform slipped as large earthquake. The high accuracy fault plane solution has a great potential to expose long-term weakening process of the crust and might be discussed from comparison with a detailed mapping of minor faults/fractures by geological studies.

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