Focal mechanisms of micro-earthquakes and regional stress field in the Tamba Plateau

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In the Tamba Plateau, Central Japan, the activities of micro-earthquake is continuously very active. After the 1995 Hyogo-ken Nanbu Earthquake occurred at adjacent area, the seismicity of the Tamba Plateau is accelerated several times more than that of before the earthquake. We determined newly numerous focal mechanisms of microearthquakes occurred in the Tamba Plateau using the data of the Abuyama Observatory, Kyoto University before/after the Hyogo earthquake. The stress tensor inversion analyses also done for small areas in the Tamba Plateau to investigate the spatial variation of the stress field.

The general feature of the stress field in Tamba region is E-W compression. Almost earthquakes have strike-slip or reverse type mechanism with P-axis of E-W direction. This main feature was not changed by the occurrence of the Hyogo Earthquake. However, in the southwestern part of the Tamba Plateau, micro-earthquakes with P-axes of NE-SW direction are observed. This area is nearest area to the rupture zone of the Hyogo Earthquake. This local variation of the focal mechanisms and stress field derived from the rupture of the Hyogo Earthquake. The results on the delta-CFF analuses are also consistent with the observed stress changes.