2016年熊本地震の活動と発震機構解、応力場(序報)

Focal mechanisms of 2016 Kumamoto earthquake activity and its relation to the stress field (preliminary report)

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The 2016 Kumamoto earthquake occurred in middle Kyushu Island, Japan where stress field is in strike-slip or normal fault regime. The minimum principal compression stress (s3), with its near north-south trend, is dominant throughout the entire region. In this study, we determined focal mechanisms related to the seismic activity from first P wave polarity data by urgent seismic observation deployed in the hypocentral area.

Generally, the earthquakes in strike-slip and normal fault types occurred around focal area, indicating maximum principal stress is similar magnitude to moderate one as suggested by the result of stress tensor inversion by Matsumoto et al. (2015). The focal mechanisms show spatial and temporal variation during the activity. The solution for main shock (M7.3) reveals different strike angle from centroid moment tensor solution by F-net (NIED). This suggests the mainshock rupture change its direction to the Futagawa fault.

In addition, the result is indicative of change in stress condition associated with the occurrence of the main shock (M7.3) around Futagawa and Hinagu faults.

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