Fault Structure of the 2016 Kumamoto earthquake using relocated aftershocks

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We estimated the fault structure of the 2016 Kumamoto earthquake using relocated aftershocks for 1 week after the Mj 6.5 foreshock (21:26 14 April 2016). Aftershocks relocation was performed using double-difference method [Waldhauser and Ellsworth, 2000]. For analyzing many events, we picked first arrival times of P and S-waves using automatic picking system (Home Seismometer Corporation) applying to the data of temporal seismic observation around the Futagawa-Hinagu Faults by group for urgent joint seismic observation of the 2016 Kumamoto earthquake. The station using relocation were selected within 50 km distance from epicenter. We firstly calculated initial location using HYPOMH [Hirata and Matsu'ura, 1987] with 1-D velocity model (routine analysis in Kyushu University). Then, we applied tomoDD code [Zhang and Thurber, 2003] with 3-D velocity model [Saiga et al, 2011]. Total number of relocated event is approximately 10,000, which is approximately 5 times compared with JMA catalog. Preliminary result shows some complex alignment of aftershocks associated with foreshock, mainshock, and induced earthquakes.

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