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# 3次元地震波速度構造が震源メカニズム及び震源位置に与える影響

# Influence of a three dimensional mantle structure on focal mechanisms and locations

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Recent progress in large scale computing by using Spectral-Element Method and the Earth Simulator have shown their possibilities in full-waveform inversion of seismic structure. Specifically Liu and Tromp (2006) have shown that it becomes feasible to compute finite frequency kernel for seismic velocity structure based on adjoint method. We plan to apply their SPECFEM3D method to obtain seismic velocity structures beneath East Asia. We will use GAP_P 2 model (Obayashi et al. 2009) as an initial 3D model. Before accumulating finite frequency adjoint kernels for seismic velocity structure, we estimated influences of the initial 3D model on the focal mechanism and location.
We chose more than ten earthquakes occurred in the interested region. We picked up time windows for P and S waves that have decent match between data and synthetics for the 3D model, and then use these windows in the source location and mechanism inversions to achieve the best source solution. We will discuss how source locations and mechanisms can be changed by the 3D model and whether the recalculation of the source mechanism and location is needed or not.

Keywords: Tomography, Source mechanism, mantle structure