Elastic and anelastic structure of mantle transition zone beneath Northwest Pacific

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The aim of this study is to obtain models beneath the Northwestern Pacific by using waveform inversion, utilizing the densest array data from F-net and Hi-net. Our dataset show that a systematic disagreement of amplitudes between observed seismograms and synthetic seismograms which are calculated with the PREM.

We perform simultaneous waveform inversion for both elastic and anelastic structure (shear wave velocity and Q) in order to solve for this problem. Our obtained 1D model beneath the Northwestern Pacific shows lower Q in the mantle, which is roughly consistent with previous Q tomographic studies. Using our obtained 1D Q model as a starting model, we perform inversion for more localized structure.