Wave-equation traveltime tomography unravels a scenario of horizontal mantle flow beneath the North China craton

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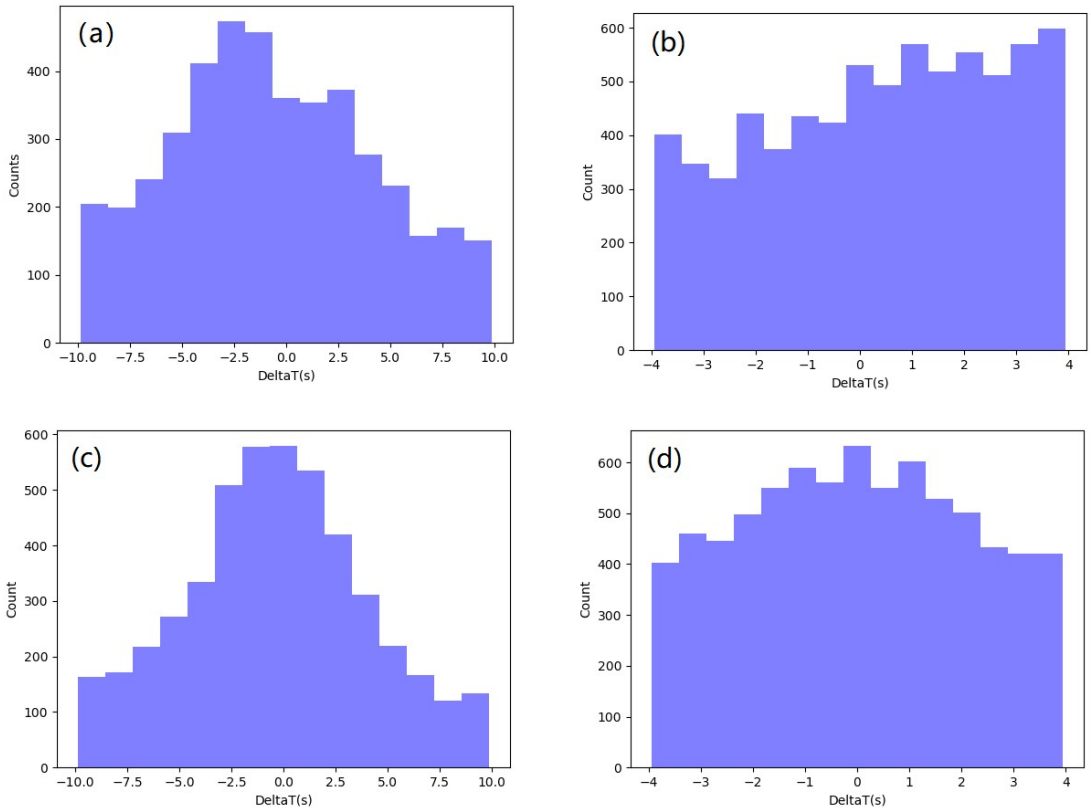

Figure S1. Histograms of the traveltime residuals before and after inversion in two frequency bands. (a) initial model of low-frequency band (20 – 100 s); (b) initial model of high-frequency band (8 – 50 s); (c) final model of low-frequency band (20 – 100 s); (b) finial model of high-frequency band (8 – 50 s).

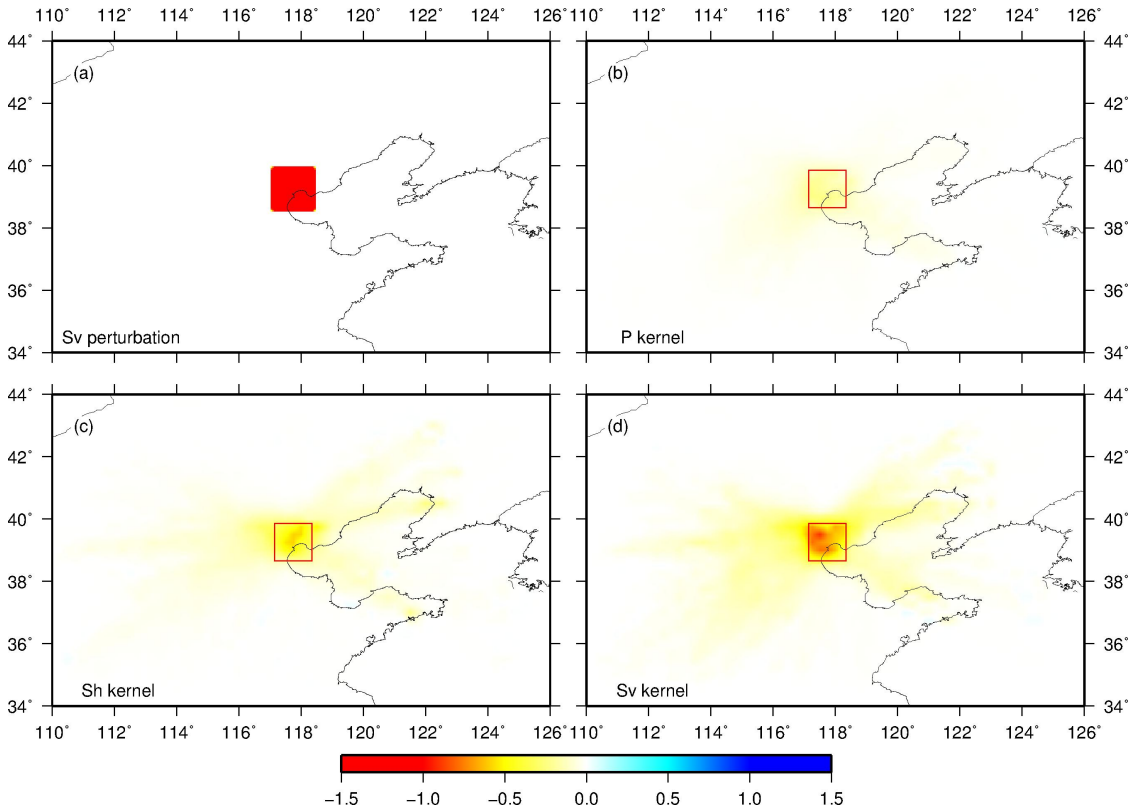

Figure S2. A point-spread function test of SV at the central of the study area at a depth of 20 km. (a) input low-SV velocity perturbation, (b) PSF of P wave velocity, (c) PSF of SH wave velocity, (d) PSF of SV wave velocity. The unit of the color bar is 1×10^{-10} s^2m^{-4}.

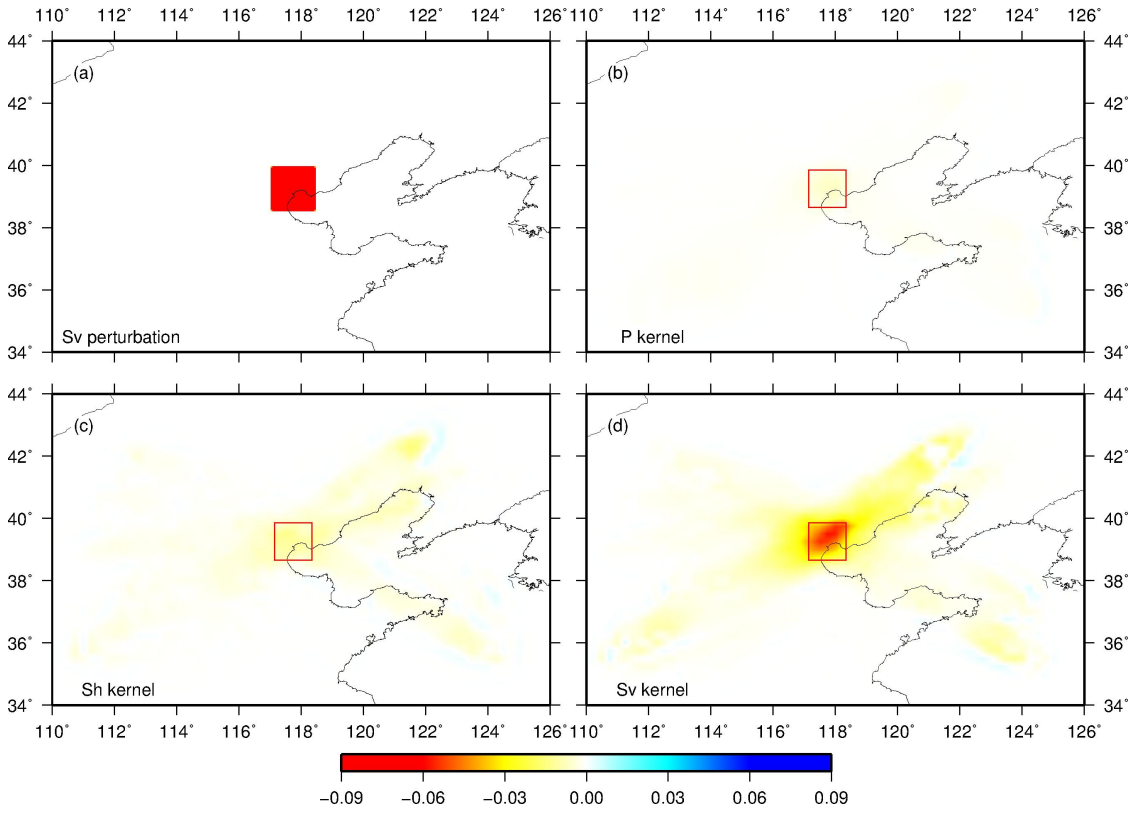

Figure S3. A point-spread function test of SV at the central of the study area at a depth of 60 km. (a) input low-SV velocity perturbation, (b) PSF of P wave velocity, (c) PSF of SH wave velocity, (d) PSF of SV wave velocity. The unit of the color bar is 1×10^{-10} s^2m^{-4}.

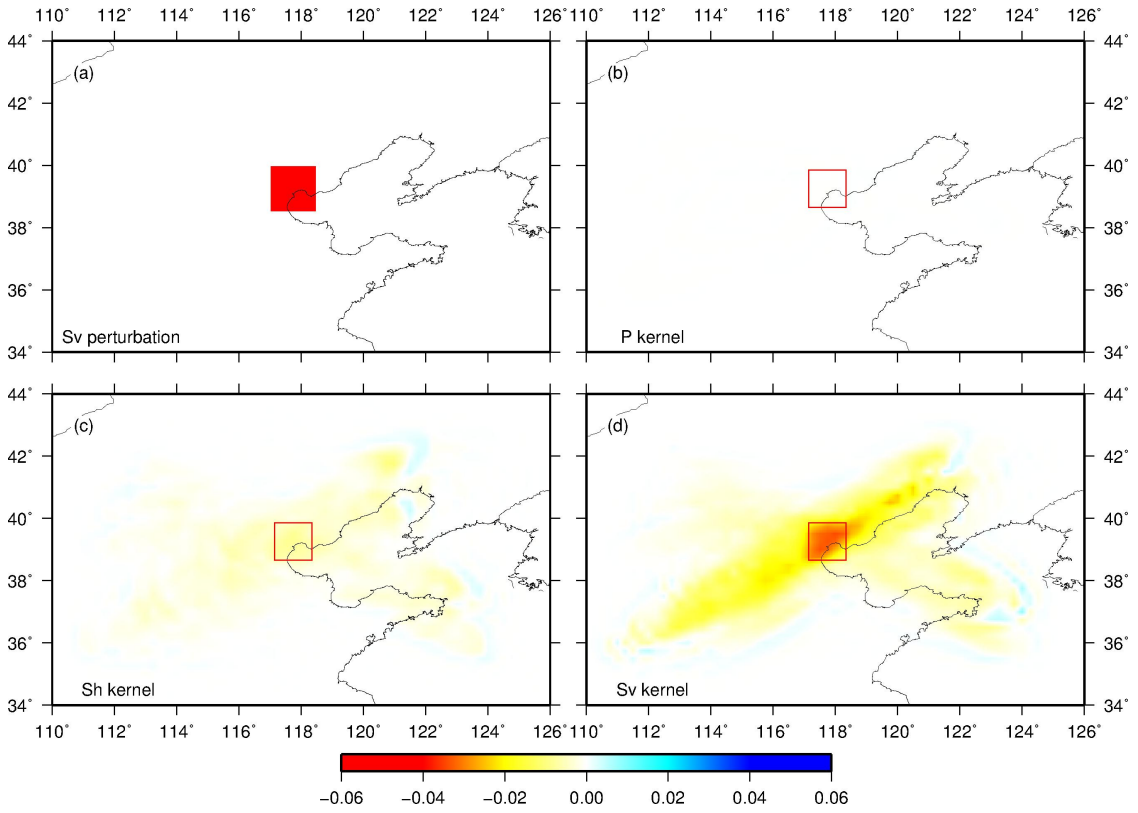

Figure S4. A point-spread function test of SV at the central of the study area at a depth of 100 km. (a) input low-SV velocity perturbation, (b) PSF of P wave velocity, (c) PSF of SH wave velocity, (d) PSF of SH wave velocity. The unit of the color bar is 1×10^{-10} s^2m^{-4}.

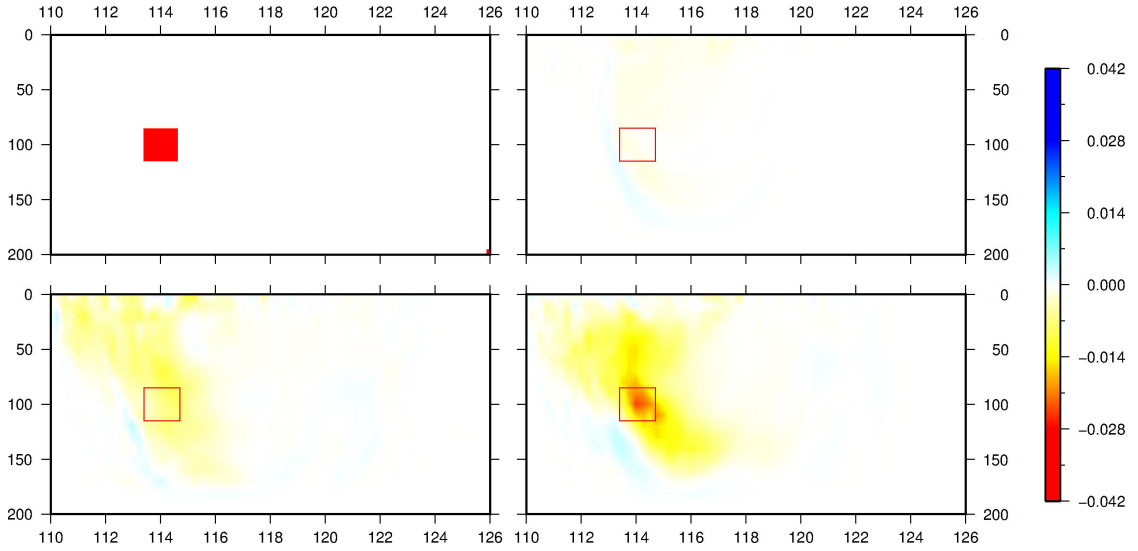

Figure S5. A point-spread function test of SV at the upper-left of the study area along 39° N. (a) input low-SV velocity perturbation, (b) PSF of P wave velocity, (c) PSF of SH wave velocity, (d) PSF of SV wave velocity. The unit of the color bar is 1×10^{-10} s^2m^{-4}.