Improved upper mantle seismic imaging beneath the Pacific Northwest interior

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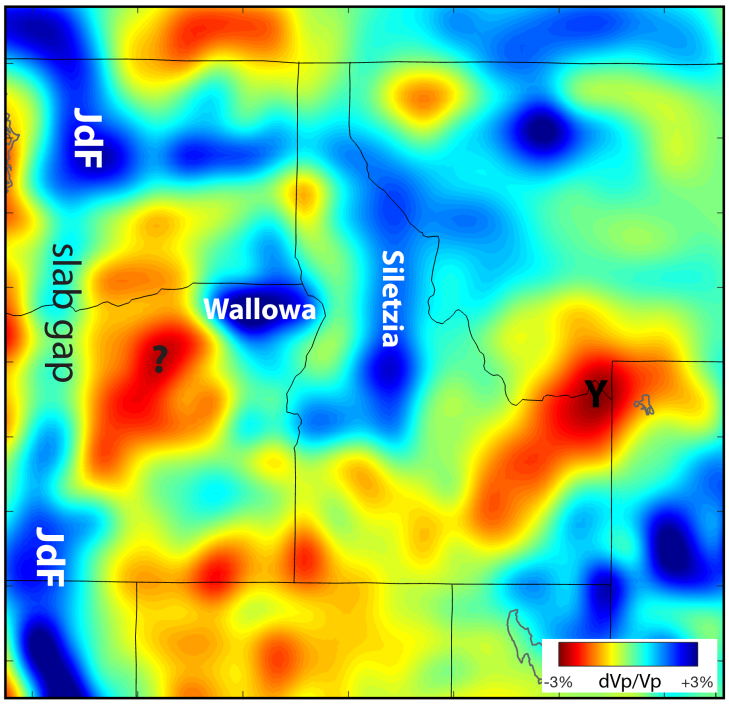
Teleseismic tomography has a history of application dating back more than forty years. This history has been accompanied by improvements in methodology as problems were recognized and addressed by advances in theory, computational ability, and data volume and quality. This progress continues today. One common application of seismic tomography has been its use in regional upper mantle imaging, often revealing the processes that underlie geologic observations of magmatism and tectonics. We address the problems, improvements and limitations of this method in the Pacific Northwest interior. We present new P, S, and Vp/Vs models that benefit simultaneously from improved algorithms and additional data from recently deployed flexible array experiments.



Upper mantle P tomography: 160 km depth slice