

## Possible evidence for a double crossing phase transition in D'' beneath Central America from inversion of seismic waveforms

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We invert seismic body-wave waveform data for the vertical dependence of (isotropic) shear-velocity in the D'' layer beneath Central America, using the transverse components of relatively long period broadband waveforms (20-200 s) as data. Our models suggest that the S-velocity increase in D'' may be localized in the zone from 100-200 km above the core-mantle boundary (CMB), while the S-velocity does not significantly deviate from PREM in the zone from 0-100 km above the CMB. Resolution tests indicate that our model is resolving the vertical velocity profile within the D'' layer and that the lower half of the D'' is especially well resolved. This suggests the possible existence of a double crossing (a reverse phase transition from post-perovskite back to perovskite) at a depth of 100 km above the CMB.