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Investigating seismic radial anisotropy beneath the Zagros belt

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In this research, the difference between the velocity of Rayleigh and Love waves is used to determine radial anisotropy beneath the Zagros belt. The continuous ambient noise data are processed to image 2D tomographic dispersion maps from the period of 8 to 50 s. Then, a quasi-3D shear wave velocity and radial anisotropy model are calculated by joint inversion of the Rayleigh and Love local phase velocity dispersion curves using MCMC method. Our results imply the presence of intense radial anisotropy due to the dense minerals in the crust and uppermost mantle of the Zagros zone. Radial anisotropy changes from positive values in the crust to negative values in the upper mantle which may be evidence for the decoupling of the crust from the upper mantle beneath the Zagros.

Promotional text

Shear wave velocity and radial anisotropy model of the Iran plateau was determined using Bayesian Markov chain Monte Carlo inversions
Radial anisotropy patterns suggest ductile shear zones in the middle to the lower crust beneath the Zagros.
Radial anisotropy changes from

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