

of Mantle Transition Zone Seismic Discontinuities Beneath Northwestern South America from P wave Receiver Function Analysis.

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Mantle transition zone is delimited by two seismic discontinuities at 410 km and 660 km. These are imaged under the northwestern corner of South America using the receiver function technique and a seismological record with up to 30 years registered by the national seismological network of Colombia. Significant variations and spatially systematic in the discontinuity depths were observed. The mean depths for the mantle transition limits are 412 ± 5.3 and 671 ± 5.9 with a mean thickness of 258 ± 6.5 , this value is similar to the global average. The low correlation between the discontinuities is caused by the significant depth variation and the thicker mantle transition zone in some areas is because the Nazca and Caribe plates subduction under South America plate. On the other hand, mantle transition zone thinning beneath the Nazca plate possible is due to the Malpelo ridge presence. These observations together with seismic tomography investigations could confirm the interaction of Nazca and Caribe plate within the upper mantle and mantle transition zone hydration.

Promotional text

The first research using receiver function analysis to unravel mantle transition zone topography in the northwestern part of South America. The results are useful for understanding geodynamical processes in this zone.

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Oral preference format

pre-recorded video

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