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## Estimation of Mantle Transition Zone seismic discontinuities beneath northwestern South America from P-wave Receiver Function Analysis

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The present work seeks to study the seismic upper mantle discontinuities of the northwestern part of South America and report the results of the first P-to-S radial receiver function investigation of the 410 km and 660 km depth discontinuities that bound the mantle transition zone (MTZ) beneath Colombia. In order to calculate the receiver functions and generate a first-order approximation of these discontinuities' lateral depth variation and MTZ thickness. We used teleseismic information recorded in the broadband seismological stations of the National Seismological Network of Colombia between 1995 and the present year with epicentral distances in a range of 30 and 130 degrees and a magnitude greater than 6. Determining the extent of these seismic discontinuities features is the key to address several problems in region tectonics related to the structure, evolution, and mantle dynamics and study how is the behavior of the subduction processes of the Nazca and Caribbean plates beneath the South American plate.

### Promotional text

The results of this on-going investigation are an important input for every researcher interested in a proper characterization of the earth's interior for better processing, interpretation, and assessment of monitoring data and disturbances in the earth.

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