

T1.2-P04. Crustal thickness estimation beneath the Northern Andes using the receiver function method

We calculated receiver functions under the Northwestern Andes and adjacent areas, to deduce crustal thickness. We use data from the broadband network of Colombia, which has been working since 2008; presently the network consists of 29 stations, 10 of which have been installed between 2012 and 2014, and are operated by the Colombian Geological Survey. With the receiver function calculation, we were able to map crustal thickness and Vp/Vs ratio in regions of the Northwestern Andean system where there were no previous estimations. We also collected information of Moho depth from previous studies and neighboring regions to present a new map of interpolated crustal thickness of the Northern Andes. Our results included a wide range of crustal thicknesses, with values of around 14 km beneath the Malpelo Island on the Pacific ocean, 20 to 30 km at the coastal Pacific and Caribbean plains of Colombia, 25 to 35 km beneath the eastern plains and foothills, 34 to 40 km beneath the Western Cordillera, 40 to 45 km at the Magdalena River intermountain valley, 53 to 58 km in the northern Central Cordillera, and reaching almost 60 km beneath some of the volcanoes of the southern cordilleran system of Colombia.

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