

2.3-P14. Moment-tensor calculation for the Vega Colombia Mw 7.2 earthquake

On September 30, 2012, an earthquake of magnitude Mw 7.2 occurred at the depth of ~170 km in the southeast of Colombia. This seismic event is associated to the Nazca plate subduction converging eastward relative the South America plate. The seismicity distribution recorded by the National Seismological Network of Colombia (RSNC) since 1993 shows a segmented subduction zone with varying dip angles. The earthquake occurred in a seismic gap zone of intermediate depth. We estimated the moment tensor, the centroid position, and the source time function. The parameters were obtained by inverting waveforms recorded by RSNC at distances 100 km to 800 km, and modeled at 0.015-0.035 Hz, using two 1D crustal models, taking advantage of the ISOLA code (Zahradnik and Sokos, 2008 and 2013). The DC-percentage of the earthquake is very high (~95%). The focal mechanism is mostly normal, hence the determination of the fault plane is challenging. An attempt to determine the fault plane was made based on mutual relative position of the centroid and hypocenter (H-C method). Studies in progress are devoted to searching possible complexity of the fault rupture process, quantified by multiple-point source models. We evaluated two sources in the frequency range 0.01-0.09 Hz.

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Track Classification: 2. Events and their characterization