

S-wave Velocity Structure beneath PS14-ROSC Station using Microtremor Arrays

The PS14-ROSC station was certified as a CTBTO Primary Seismic Station since 2003. The station is located in Rosal close to the Colombian National Seismological Network headquarters. The ambient seismic noise around the station has increased since it was installed. With the purpose of improving the signal-to-noise ratio, reducing noise and improving seismic data quality we have proposed to deepen the seismometer vault. In order to estimate the S-wave velocity structure beneath the vault we conducted microtremors arrays measurements (radius from 60 cm up to 25 m). We calculated the dispersion curve, the V_s velocity profile and H/V ratio at the site. We estimated an average V_{s30} value of 203 m/s that classifies the soil as a Soil Type D or stiff soil according to Colombian Building Code NSR-10. The H/V noise ratio exhibits a peak around 6.65 Hz corresponding with V_s 400m/s at a depth of 20m in the S-wave velocity profile. Other geophysical measurement are required to know more characteristics of the bedrock.

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