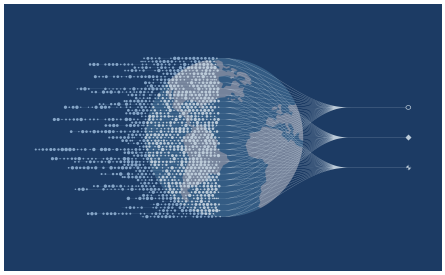

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dense nodal array in Cartago, Costa Rica defines ground truth events and enables stacking of teleseismic waveforms from potential nuclear test explosions

To contribute to the identification and mapping of active faults and their geometries in and around Cartago, Costa Rica, scientists from the Costa Rica Volcanological and Seismological Observatory at the National University (OVSICORI-UNA) and from the United States Geological Survey (USGS) have joined efforts to install and operate an urban, dense array of seismic nodes. The network consists of 70 short-period three-component nodes on a grid with an average spacing of about 2 km. This network was installed in July 2024 and will operate until April 2025. The high rate of seismicity in Cartago and its surroundings ensures recording and location of numerous local events with magnitudes also to be recorded by OVSICORI-UNA's permanent seismic network. This dense network can record events at regional and teleseismic distances. Earthquakes within the network will be located with uncertainties in locations of a few hundred metres and depth of less than 1 km. We expect to have a significant number of ground truth events added to our seismic catalogue, which can be used for station corrections. This dense array will be useful for stacking waveforms from earthquakes and potential nuclear explosions at teleseismic distances. We will be presenting preliminary results from this array.

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