

## **Seismicity and tectonics in the Peruvian southern region**

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Data from several seismic experiments in Southern Peru allowed to record a large amount of superficial seismic activity occurred mainly in the Pacific side of the Andes Western Cordillera and permitted the definition of seismogenic sources located Westwards and North-westwards of the city of Arequipa. Most activity that affects Arequipa comes from these sources, that are related with the subduction of the Nazca plate underneath the South-American plate.

Several elongated seismic sources, parallel to the coastal line, located to distances between 60 to 150 km from Arequipa, have been identified with that data. The more distant sources are located near the seaside while the nearest ones are in the continental portion. These continental sources include a set of faults that form a large zone of fragility, known as the San Agustin Faults System, where in 1958, 1960 and 1979 occurred three large magnitude earthquakes that damaged seriously the city of Arequipa.

The statistical analysis of those seismic sources activity permit to determine that the San Agustin system is represented at present times for seismic events of mid to low size magnitudes, with relation to the other sources of Southern Peru. However is important to remember that this system has originated large destructive earthquakes that damaged seriously Arequipa in the last decades. Additional studies to control the seismic activity in those seismogenic sources and to define their tectonic evolution, are necessary.