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22 New Focal Mechanism Solutions for Shallow Earthquakes and Stress Observations for Bolivia (Plurinational State of).

On this research we present 22 new focal mechanism solutions for shallow earthquakes (<70km depth) located at Bolivia region, most of them were felt by people and caused some damage to structures. Until 2016 the way of data processing with a small network did not allow us to get focal mechanism solutions for magnitudes below 4.5 Ml. After 2016 with the seismic network enhanced and the data merging from LPAZ - PS06, SIV-AS08 and Penas-IS08 under the NDC-in-a-BOX Seiscomp 3 - Seisan software allow us to have accuracy data to implement the focal mechanism procedure. We applied the Double Couple method which takes the elastic wave radiation from an earthquake and they can be modeled in two equivalent ways, it means that there is a point force which applies exactly to a point in an elastic medium that is represented as pairs of point forces, so the result can be used to show a shear faulting. Our solutions were tested numerically and verified in situ, all of them are coherent with the geology and stress system maps for the region, all solutions were presented to Civil Defense Minister to contribute to National Hazard Map.

Primary author: FERNANDEZ, Gonzalo Antonio (Observatorio San Calixto)

Presenter: FERNANDEZ, Gonzalo Antonio (Observatorio San Calixto)

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