ID: **P1.2-100** Type: **E-poster**

Double-Difference Hypocentral Relocation and Seismic Moment Calculation of Valle de la Trinidad Seismic Sequence, Baja California, Mexico

Tuesday, June 20, 2023 10:54 AM (1 minute)

Seismic events recorded by the Northwest Mexico Seismic Network are initially located through an automatic system and then manually refined by an analyst. However, this procedure is far from ideal because the considerable dispersion observed in the earthquake cluster does not allow a precise source location. To obtain higher resolution hypocentral locations and thus provide more knowledge and definition of the zone's tectonics, the double-difference algorithm (HypoDD) will be applied to a seismic sequence near the town of Valle de la Trinidad, northern Baja California. This sequence began on August 17, 2020, with an earthquake of local magnitude ML=5.1, and the catalogue to be used for this study will cover until June 2022, resulting in a total of 888 seismic events. This seismicity is still active today and comprises a range of magnitudes from 1≤ML≤5.1. Seismic source parameters of the sequence will be calculated, with particular attention to the seismic moment (Mo), to observe the behaviour of the Mo-ML relationship that several authors have reported as non-linear for southern California and northern Baja California, specifically in the magnitude range 4≤M≤6.8.

E-mail

alejamarg1@gmail.com

Promotional text

Relocation techniques are essential for a more precise location of the seismic source and knowledge of its geometry. In addition, the relationship between Mo and ML has been proposed as an efficient discriminant between tectonic and explosive sources, like nuclear explosions.

Oral preference format

in-person

Primary author: MARTINEZ, Alejandra (Ensenada Center for Scientific Research and Higher Education (CICESE))

Presenter: MARTINEZ, Alejandra (Ensenada Center for Scientific Research and Higher Education (CICESE))

Session Classification: Lightning talks: P1.2-1, P3.1, P3.4, P4.5

Track Classification: Theme 1. The Earth as a Complex System: T1.2 The Solid Earth and its Structure