 Recent Seismicity in the Cebrero Volcano, Western Mexico
Diana Núñez *, Marcela I. Chávez-Méndez, Francisco J. Núñez-Cornú, Juan M. Sandoval, Norma A. Rodríguez-Ayala and Elizabeth Trejo-Gómez
Centro de Seismología y Volcánología de Occidente (SuVdE) - Universidad de Guadalajara (Mexico)

Abstract
The Cebrero volcano is an active stratovolcano located in the western part of the Mexican transverse volcanic belt. In 2015, we installed a temporary network with 31 seismic stations to monitor the volcano’s seismicity and monitor any changes in the volcanic system. This network allowed us to obtain a detailed view of the Cebrero volcano’s seismic activity, which is characterized by low-frequency earthquakes with amplitudes of ±500 μm.

Seismicity from Nov 2016 to July 2017 [31 Seismic stations]
As a part of “P2-24 Exploración sísmica y magnetotellurica en la vertiente occidental del Volcán Cebrero y la Calera de la Primavera” project, we installed a temporary network with 31 Obsidian 43 and 3X (Kinematics) with Lennertz 3Gile sensors of 1 Hz natural frequency that, joined to some permanent network (three Taurus (Kinematics) and one Queen (Kinematics) digitizers) to build an arrangement that covered an area of 16 km x 16 km with one station every 1.5-3.1 km. These stations were recording from November 2016 to July 2017.

Previous Seismicity Studies in Cebrero Volcano
From 2009 to 2016 the seismicity at Cebrero was monitored with a digital three-component short-period seismometer station (CEBN) located in the south flank of the volcano within a zoon from the summit from March 2015 to July 2016 (Rodriguez, et al. 2013). In this period, the seismograms were classified as impulsive arrivals, extended coda, hidden coda, and wave package, and wave package amplitude modulation earthquakes. The most populated group was the hidden coda that presented durations of 0.5.

At the moment, we are just beginning to analyze the data obtained the daily hammerers for every station, a very preliminary automatic location with Antelope system (Kinematics) that has yielded the following results and also, we have relocated these events with HYPO71 in different depths obtaining 19 events in the area of Cebrero Volcano.

These data correspond just to the events recorded in April and May 2017.

Preliminary relocations obtained from HYPO71 with a velocity model appropriated for this area.