8th International Conference on Seismology & Earthquake Engineering
11-13 Nov. 2019, Tehran, Iran

SPECTRAL ANALYSIS OF 12 NOVEMBER 2017 AND 25 NOVEMBER 2018 EARTHQUAKES IN WESTERN IRAN

Nahid KHODI AGHMIOUNI
M.Sc. Graduate, Seismology Research Center, IIEES, Tehran, Iran
khodi.nahid@gmail.com
Mehrdad MOSTAFAZADEH
Assistant Professor, Seismology Research Centre, IIEES, Tehran. Iran
mehrdad@iiees.ac.ir

Keywords: Seismic moment, Body-wave spectrum, Energy, Stress drop

The 12 November 2017 Ezgeleh earthquake, M_w=7.3, occurred at 18:18:24 GMT, in western of Iran (Figure 1). Seismic source parameters were determined by using teleseismic data and body-wave spectrum. Data was provided in the SAC format of the IRIS site, which includes 31 stations at a distance 30 to 90 degrees. P phase was selected on the vertical component and body-wave spectra were provided for each record. In this study, the seismic moment of Ezgeleh main shock was calculated using Keilis-Borok method (1960) and its mean value is 1.45E+27 dyne-cm. By using Brune (1971) method, source radius and stress drop of this event is calculated 12 km and 394 bar respectively.

The 25 November 2018 Sarpol-e Zahab aftershock, Mw=6.3, occurred at 16:37:37.1 GMT, in southern part of the study area. Seismic energy calculated by using body-wave spectrogram (Thomas et al., 1972) and is equal to 3.7×10^{11} joule (Figure 2).

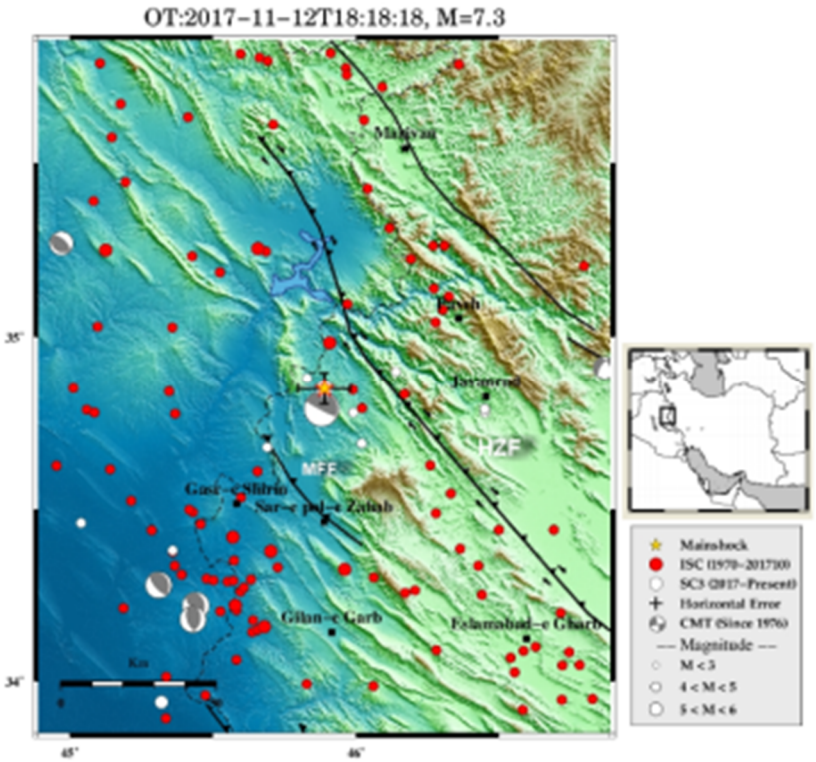

Figure 1. study area, seismicity and fault data map (IIEES).

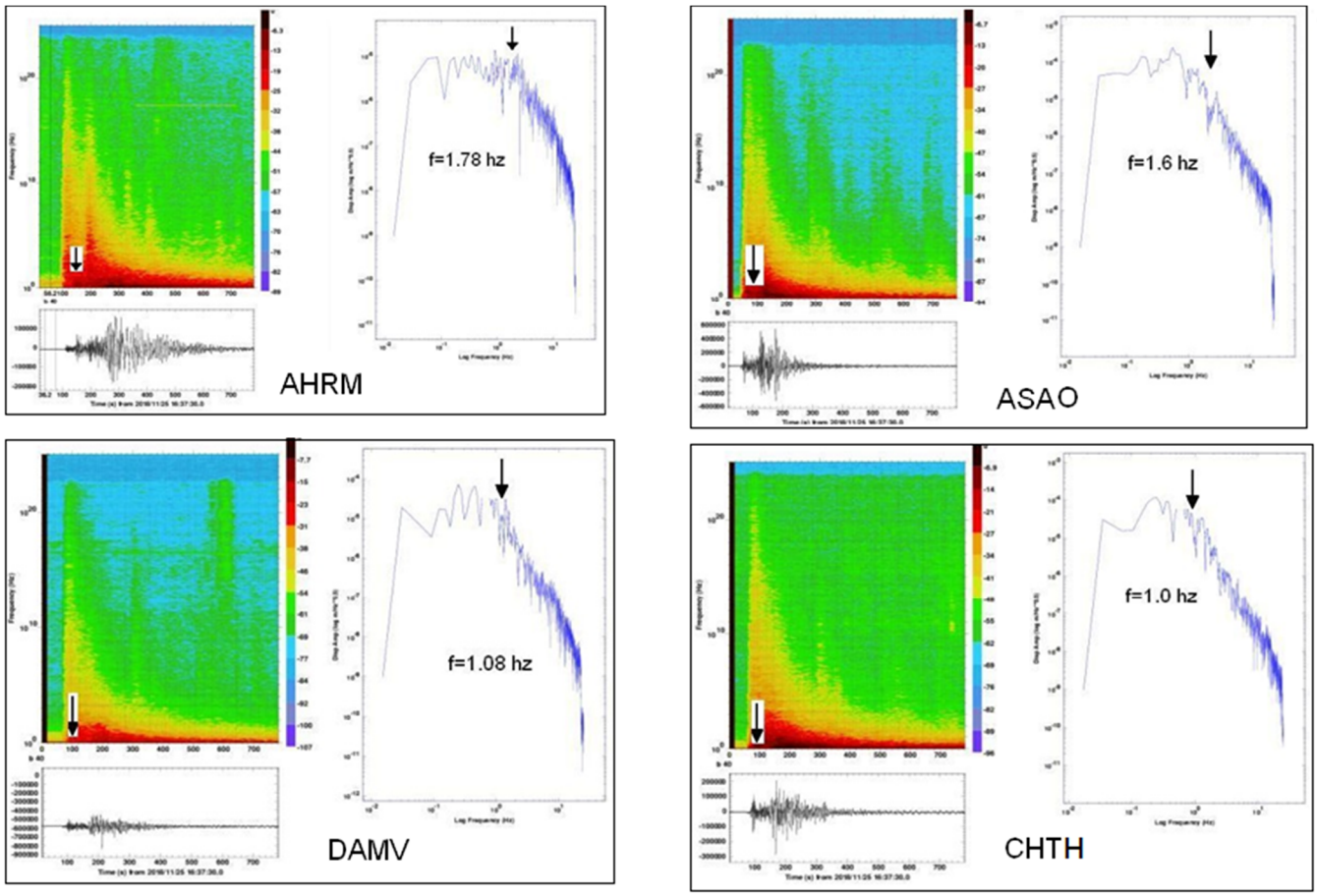

Figure 2. Body-wave spectrogram prepared by using seismic data at stations: AHRM, ASAO, DAMV and CHTH.

REFERENCES

Brune, J.N. (1971). Correction (to Brune (1970)). *J. Geophys. Res.*, 76, 5002.

Keilis-Borok, V.I. (1960). Investigation of the mechanism of earthquakes. *Sov. Res. Geophys.* (English transl.) 4, 29.

Kennett, B.L.N. and Engdahl, E.R. (1991). Traveltimes for global earthquake location and phase identification. *Geophysical Journal International*, *105*, 429-465.

Thomas C. Hanks and Max Wyss (1972). The use of body- wave spectra in the determination of seismic- source parameters". *Bulletin of Seismological Society of America*, *62*(2), 561-589.