Dynamic Triggering Earthquakes Exploration by Sonification of Seismograms

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We have been proposing the sonification of seismograms for exploring dynamic triggering earthquakes (Uchide et al., JpGU, 2016, 2018; Matsubara et al., 2016). The seismic sonification for the 2011 Tohoku-oki earthquake successfully revealed a dynamic triggering event in the Hida area, Central Japan. For the ease of the seismic sonification for seismologists, we are developing the Sonification of Seismograms (SoS) system (Uchide et al., JpGU, 2018), which assigns sound whose amplitude and tone correspond to the maximum absolute value and the number of zero-crossings of seismograms in short time windows.

This study investigates dynamic triggering events by recent major earthquakes using the SoS software. In the case of the 2011 Tohoku-oki earthquake, the dynamic triggering event in the Hida area was M 4.2 (Ohmi et al., 2012) which is relatively large. Identification of smaller dynamic triggering events may be a challenge. Limiting areas of stations for the sonification help us identify where a dynamic triggering event may or may not occur.

In front of our poster, we will provide the opportunity to listen sonified sounds and demonstrate the interactive sonification process using the SoS.

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