

## Waveform twins in seismic ambient noise

\*Kei Katsumata<sup>1</sup>

1. Institute of Seismology and Volcanology, Hokkaido University

Katsumata (2019, Fall Meeting, the Seismological Society of Japan) reported that unusual similar waveforms are included in the seismic ambient noise. As a result of applying an 8-16 Hz band-pass filter to the vertical component of 0.5 seconds in length, the following characteristics were observed (Katsumata, 2019). (1) Absolute value of waveform correlation is 0.8 or more, (2) Time interval of the similar waveform is 10-60 seconds, (3) Almost simultaneous (within several seconds) at seven seismic stations 10-30 km apart from each other, (4) They were observed more during the day than at night, (5) Less Sundays and holidays. And, from the features of (4) and (5), it is stated that this unusual similar waveform is not a continuous occurrence of natural earthquakes but a vibration caused by artificial noise sources. Based on these, the purpose of this study is to show the following two things. (1) The unusual similar waveform reported by Katsumata (2019) is observed in other regions. (2) The similar waveform is possibly the reflected waves inside the sedimentary layer.

Keywords: seismic ambient noise, waveform twin, reflected wave