

Yearly change of noise level and detection capability of microearthquakes for NIED-Hi-net

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National Research Institute for Earth Science and Disaster Prevention are collecting continuous seismic data from 670 stations of High Sensitivity Seismograph Network (NIED Hi-net) and Kanto-Tokai network, which is the original microearthquake observation network of NIED. Recently, national real-time distribution system of high sensitivity seismic waveform data has started between Japan Meteorological Agency, universities and NIED. These data are distributed by satellite seismic telemetry system operated by universities. Now, it is easy to retrieve the high sensitivity seismic data from the Hi-net WEB site. In the case of using the seismic data, it is important to know characteristics of noise level at each station and detection capability of microearthquakes. The Hi-net continuous waveform data are used to calculate the RMS noise amplitude. Mainly, the noise level is affected by human activities and weather change. Except the daily change caused by human activities, the yearly change is observed. The quietest period is July, and it is common feature for all stations in Japan. The noise level gradually increases from September to December and January. Winter weather system, which gives strong wind, is the powerful source for high noise level in not only Japan Sea side but also Pacific Ocean side. The yearly change of the noise level affects to the detection capability of microearthquake. The detection capability is expected to decrease in the winter season. The difference of the lower limit of magnitude, which can be detected, is about 0.5 between in the summer and winter season.