

## Atmospheric gravity waves observed by broadband seismometers

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In an attempt to search for origins of Earth's background free oscillations and to detect possible background atmospheric free oscillations, we started an array observation of air pressure variation. For the installation of the array we performed test observation of microbarometers at Earthquake Research Institute and Tokyo Institute of Technology last year. In the period from 9/21 to 9/22 we detected atmospheric gravity waves. We also analysed data of 6 broadband seismometers of Freesia. The observed waves are approximated by plane waves propagated from northwest. The group velocity is about 4.8m/s. There are two probable mechanisms. One is forced wave generation in stably stratified airflows over mountains. The other is frontally forced wave generation. The lack of high speed wind shows that only mountain waves cannot explain the observation. Frontal forced mechanism is more probable but we need further study.