

High resolution barometer array in Palau, Western Pacific

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The Variety of waves is propagating in the atmosphere, ocean and solid earth. And there are interacting between each layer. For total and integrated understanding, multi parametric measurement over different field is required. We target Palau islands, western Pacific for multi parametric measurement. We are operating broadband seismic station in a station of Pacific Geophysical Network (OHP network). And another seismic station is also under operation due to removing of seismic station. Meteorology group of JAMSTEC has their station including meteorological radar. We think that Palau is fine condition to construct integrated geophysical measurement field. So that we deployed high resolution barometric small array in Palau.

Palau locates tropical zone and its daily weather condition is similar and relative more stable than middle latitude zone and polar area that have some day's variation and passing of front. In our research, one of main focuses is very low frequency band of barometric variation; the ambient condition has merit to get accurate detection of signal.

As for observation system, sensor is quartz oscillation type high resolution barometer and recorder is Linux Box via serial communication. We set to be sampling of 2 sps to get high resolution data. We installed Five(5) stations in Palau whose station interval is about 20km. Two stations of them locate at seismic stations and another station is same area with weather station. The array is operating from August, 2013 and is under operation.

The tentative data review shows atmospheric gravity wave is frequently recorded in longer period of 200sec. Sometimes event pulse-like signals are detected. Apparent velocity of these waves is 20 ? 30 m/s and direction of propagation varies daily. Most signal arrives from outside of this array. We report character of these wave and relation with meteorological condition.

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