

## Severe weather phenomenon detected by pressure sensors -thunderstorm-

ARAI, Nobuo<sup>1</sup> ; MURAYAMA, Takahiko<sup>2\*</sup> ; IWAKUNI, Makiko<sup>2</sup> ; MOTOHASHI, Masashi<sup>2</sup> ; YOSHIKAI, Tomohiro<sup>2</sup> ; MOGAMI, Mami<sup>2</sup>

<sup>1</sup>Disaster Mitigation Research Center, Nagoya University, <sup>2</sup>Japan Weather Association

Recently, meteorological disturbances and localized concentrated heavy rainfall drastically developed thunderclouds, which can be attributed to global warming, cause disasters like debris. In order to detect such a localized concentrated heavy rainfall, X-band polarimetric radar information network system (XRAIN) is gradually deployed and operated in Japan. The radar system can detect regional scale distribution of cloud water and growing process of localized concentrated heavy rainfall. However, spacial scale of thunder and tornado is smaller than the resolution of the radar system.

Infrasound signal is generated by rapid compress atmospheric such as thunder and vortex rotation by wind. Infrasound array system can detect arrival direction, but it is difficult to estimate the distance from source to observation point only one Infrasound array system.

Many meteorological disturbance in combination with thunder occurred on the Kanto region in the summer of 2014. In order to evaluate meteorological disturbance more accurately, we set up new Infrasound array system in Saitama Prefecture in addition to the existing in Chiba Prefecture.

The back azimuth of signals at two Infrasound array system intersect, and the place was high precipitation intensity on XRAIN image.

Keywords: Infrasound, severe weather phenomenon, XRAIN, thunderstorm