

## Next-generation alerting system for natural disasters using ground network and micro-satellites

\*高橋 幸弘<sup>1,2</sup>、佐藤 光輝<sup>1,2</sup>、久保田 尚之<sup>1,2</sup>、山下 幸三<sup>3</sup>、石田 哲朗<sup>1,2</sup>

\*Yukihiro Takahashi<sup>1,2</sup>, Mitsuteru Sato<sup>1,2</sup>, Hisayuki Kubota<sup>1,2</sup>, Kozo Yamashita<sup>3</sup>, Tetsuro Ishida<sup>1,2</sup>

1. 北海道大学・大学院理学院・宇宙理学専攻、2. 北海道大学・大学院理学研究院、3. 足利大学・工学部

1. Department of CosmoSciences, Graduate School of Science, Hokkaido University, 2. Faculty of Science, Hokkaido University, 3. Faculty of Engineering, Ashikaga University

It is not easy to predict the intensity and location of extreme weathers, such like torrential rainfall by individual thunderstorm or typhoon since low resolution and less coverage of the existing observational methods. We have been developing an observation system for extreme weather monitoring using of 50-kg micro-satellites and with ground network consisting of automated weather stations with ground-based lightning sensor in the projects of a SATREPS “ULAT” and e-ASIA under international cooperation among Japan, Philippines, Indonesia and other SE-Asian countries supported by JST, JICA, PHL-Microsat and other fundings.

We are installing totally 60 AWS stations with lightning sensor over nation-wide of Philippines and concentrating Metro Manila. We operate micro-satellites developed and controlled by our group in order to capture the 3 dimensional structure of the thunderstorms or clouds in typhoon eye by the on-demand operation of 50-kg micro-satellites, including the Philippine-developed satellites, based on real time weather data obtained by the ground based networks and other satellite imaging. Here we show the future strategy of the alerting system for the extreme weathers and other kinds of natural disasters.

キーワード：リモートセンシング、雷、超小型衛星

Keywords: remote sensing, lightning, micro-satellite