Group 7
How Can Space Technology Contribute to Improving the Accuracy of Prediction for Natural Disasters?

Summary of debates and Panel discussion

Moderator: Shinichi Nakasuka, The University of Tokyo
Questions

• Required specifications for satellite observation for predicting floods and drought
  – What kind of information is important?
    • Ground information vs Weather forecasting information
      – Spacial resolution?
      – Time resolution?
      – Latency of the obtained data before downlink?
  • Micro/nano/pico-satellite and/or their constellation can contribute to solving the problem?
    – The required functions can be realized by miniature satellite?
    – How many satellites required?
  • Other methods?
    – Getting information from ground (Store & Forward)?
Yohei Sawada  
Associate Professor  
The University of Tokyo

- Drought is multifactorial
- Key technology = data assimilation
- Only a small subset of available EO is usable
- Precise requirements for satellite makers
- Main target = active/passive microwave observation
- Daily observation with ~1km spatial resolution

Kei Yoshimura  
Professor  
The University of Tokyo

- Today's Earth (with JAXA)
- SAR useful because cloud-free
- Poor time resolution of water surface satellite data
- No integration of all SAR databases available
- Microwave observation important (soil moisture good for flood prediction)
- Hourly global observation required for good prediction

Masashi Kamogawa  
Associate Professor  
University of Shizuoka

- Ionosphere anomaly to detect earthquake
- Possible to measure night time anomaly by the absorption of radiation emitted by lightnings on the ground
- Partnered with Nihon University for design of a 6U CubeSat Prelude
Shiori Kimura, Synspective
- Use of satellites for disaster risk prediction
- Example of SAR applications (flooded area detection, land subsidence, volcano monitoring, etc.)
- Synspective services using satellite data

Alice Pellegrino, Canon Electronics
- RGB data use for disaster monitoring
- Presentation of CE-SAT-I (50-kg class, 0.9 m GSD)
- Example of images acquired by CE-SAT-I during volcanic eruption, flood, drought, etc.

Shinichi Nakasuka, The University of Tokyo
- Example of small satellites development at the ISSL
- Presentation of Store and Forward technology for ground truth collection
Thank you for your attention

Questions?