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)?

DROUGHT

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

FLOOD

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

EARTHQUAKE

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?