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GCOM-C1/SGLI による全球雪氷観測と検証計画
Global snow and ice cover observations using GCOM-C1/SGLI

堀 雅裕[1*], 青木輝夫[2], STAMNES, Knut[3], 谷川朋範[1], LI, Wei[3], CHEN, Nan[3]
Masahiro Hori[1*], AOKI, Teruo[2], STAMNES, Knut[3], TANIKAWA, Tomonori[1], LI, Wei[3], CHEN, Nan[3]

[1] 宇宙航空研究開発機構, [2] 気象研究所, [3] スティーブンス工科大学
[1]Japan Aerospace Exploration Agency, [2]Meteorological Research Institute, [3]Stevens Institute of Technology

The ”Global Change Observation Mission-Climate” (GCOM-C) is a project of Japan Aerospace Exploration Agency (JAXA) for the global and long-term observation of the Earth environment. The GCOM-C is a part of the JAXA’s GCOM mission which consists of two satellite series, GCOM-C and GCOM-W (Water), spanning three generations in order to perform uniform and stable global observations for 13 years. The first generation of GCOM-C (GCOM-C1) carries a multi-spectral optical radiometer named Second Generation Global Imager (SGLI), which will have special features of wide spectral coverage from 380 nm to 12 micrometer, a high spatial resolution of 250m, a field of view exceeding 1000km, two-direction simultaneous observation, and polarization observation. The GCOM-C mission aims to improve our knowledge on the global carbon cycle and radiation budget through high-accuracy observation of global vegetation, ocean color, temperature, cloud, aerosol, and snow and ice. As for the cryosphere observation, not only snow and ice cover extent but also snow physical parameters are retrieved from SGLI data such as snow grain sizes at shallow layers, temperature, and mass fraction of impurity mixed in snow layer and so on. These snow physical parameters are important factors that determine spectral albedo and radiation budget at the snow surface. Thus it is essential to monitor those parameters from space in order to better understand snow metamorphosis and melting process and also to study the response of snow and sea-ice cover extent in the Polar Regions to a climate forcing such as global warming. This presentation will summarize the SGLI cryospheric products and validation plans.

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