

## B05-P01

### A LONG-TERM DATASET OF SATELLITE-DERIVED NORTHERN HEMISPHERE SNOW COVER PROPERTIES IN 5KM SPATIAL RESOLUTION PREPARED FOR JAXA'S GCOM-C MISSION

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Japan Aerospace Exploration Agency (JAXA) will launch an Earth observing satellite for climate study named "GCOM-C" in Japanese fiscal year JFY2016 which carries an optical sensor SGLI<sup>1</sup>. The GCOM-C satellite will observe various geophysical targets such as snow cover extent and snow physical parameters including snow grain size, temperature and so on in order to establish long-term satellite data record of those geophysical parameters. As a preparatory data set, JAXA has started to generate satellite products of those climate-related geophysical variables (including snow cover extent with the determination of surface dry/wet condition) in 5km spatial resolution using NASA's optical sensor MODIS radiance data. Those products have been distributed to the public through the web site named JAXA Satellite Monitoring for Environmental Studies (JASMES, <http://kuroshio.eorc.jaxa.jp/JASMES/index.html>) since 2008. Currently, the data period of the snow cover extent product are being extended toward the past around 1980's using NOAA/AVHRR radiance data. Analysis results indicate that the retrieved long-term snow cover extent in the Northern Hemisphere exhibits negative trends in all seasons, the signs of which are coincident in spring and summer but inconsistent in autumn and winter with those of the NOAA/NCDC Climate Data Record of Snow Cover Extent (SCE) products. Differences in the spatial resolution of both dataset and algorithm to detect snow cover seem to affect the accuracy of the snow cover identification. The analysis results also indicate that snow cover duration period in western Eurasian area have become about a month shorter over the satellite observation era since 1980's.

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<sup>1</sup> Imaoka, K., M. Kachi, H. Fujii, H. Murakami, M. Hori, A. Ono, T. Igarashi, K. Nakagawa, T. Oki, Y. Honda, H. Shimoda, 2010: Global Change Observation Mission (GCOM) for monitoring carbon, water cycles, and climate change, *Proceedings of the IEEE*, 98(5), 717-734, doi: 10.1109/JPROC.2009.2036869.