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Journal of The Remote Sensing Society of Japan

Vol. 29 (2009) , No. 1 p.29-39

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Near-Global Scale Retrieval of the Optical and Microphysical Properties of Clouds from Midori-II GLI and AMSR Data

[Takashi Y. NAKAJIMA](#)¹⁾²⁾, [Hirohiko MASUNAGA](#)³⁾ and [Teruyuki](#)

1) Research and Information Center, Tokai University

2) Department of Atmospheric Science, Colorado State University

3) Hydrospheric Atmospheric Research Center, Nagoya University

4) Center for Climate System Research, The University of Tokyo

(Received June 30, 2008)

(Accepted December 3, 2008)

Abstract

Various optical and microphysical properties of warm water-phase clouds from the GLI and AMSR global datasets are presented. The results indicate that the effective particle radius at the cloud top was small (6 to 10 μm) not

and coastal ocean areas, but also over the North Pacific Ocean. The AMSR coupled analysis first yielded the vertical structure of the effective particle radius over middle-to-high latitude areas, which was not covered by TRMM. Results also show that the effective particle radius at the cloud top is smaller than that in the middle to bottom layers in areas where the effective particle radius is small. These features are very similar to those at the Namibian, East African, and Peruvian regions, which are known as non-precipitation areas. In addition, a comparison between cloud properties retrieved from GLI and MODIS revealed that the effective particle radius was smaller than that derived from MODIS. The effective radius had a single mode in the histogram at $12\mu\text{m}$, while the TRMM effective radius had a modal structure at $10\mu\text{m}$ and $14\mu\text{m}$ as well as an inflection point at $12\mu\text{m}$. The reasons for this difference in the retrieved effective radii is considered to be the wavelength used for retrieving the cloud effective particle radius, which was $3.7\mu\text{m}$ and $2.1\mu\text{m}$, respectively.

Keywords: [ADEOS-II](#), [Global Imager \(GLI\)](#), [AMSR](#), [Cloud Properties](#)

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To cite this article:

Takashi Y. NAKAJIMA, Hirohiko MASUNAGA and Teruyuki IIZUMI: Scale Retrieval of the Optical and Microphysical Properties of Clouds from AMSR Data, Journal of The Remote Sensing Society of Japan, 2005, 29(1), 1-10