Geophysical Research Abstracts
Vol. 14, EGU2012-12863-1, 2012
EGU General Assembly 2012

An evaluation of a semi-analytical cloud property retrieval using Meteosat Second Generation, MODIS and CloudSat

M. Kühnlein (1), T. Nauss (1), T. Appelhans (1), A.A. Kokhanovsky (2), and B. Thies (3)

(1) Environmental Informatics, Faculty of Geography, Philipps-University Marburg, Marburg, Germany, (2) Institut of Environmental Physics, Bremen University, O. Hahn Allee 1, 28334 Bremen, Germany, (3) Laboratory for Climatology and Remote Sensing, Faculty of Geography, Philipps-University Marburg, Marburg, Germany

Knowledge of cloud properties such as cloud effective radius and optical thickness is essential to understand their role in the dynamic radiation budget and climate change. The Spinning Enhanced Visible and Infrared Instrument (SEVIRI) on board Meteosat Second Generation (MSG) with its high temporal resolution (15 minutes) permits a non-continuous monitoring of the evolution of cloud properties what has motivated the adaptation of the SLALOM algorithm developed by Nauss and Kokhanovsky (2011) to MSG SEVIRI. The optical properties of SLALOM are compared against the LUT-based approach by Platnick et al. (2003) using data from the MODIS sensor on-board of the NASA EOS Aqua and Terra satellites (King and Greenstone, 1999) as well as the cloud optical depth product (2B-TAU) of CloudSat (Polonsky et al., 2008) and results are shown over ocean and land. Over water the retrievals show very close results where differences increase over land.

References

Nauss, T, Kokhanovsky, A A, 2011. Retrieval of warm cloud optical properties using simple approximations. Remote Sensing of Environment, 115(6), 1317-1325.

Platnick, S., King, M. D., Ackerman, S. A., Menzel, W. P., Baum, B. A., Riedi, J. C., Frey, R. A., 2003. The MODIS cloud products: algorithms and examples from Terra. IEEE Transactions Geoscience Remote Sensing, 41, 459–473.

Polonsky, I.N, Labonnote, L.C., Cooper, S., 2008. Level 2 cloud optical depth product process description and interface control document, version 5.0, CloudSat Project, CIRA, Colorado State University, Fort Collins.