

Home

Online Library

- Recent Papers
- Volumes
- Library Search
- Title and Author Search

RSS Feeds

General Information

Submission

Review

Production

Subscription



Volumes Contents of Volume 7

Adv. Geosci., 7, 387-394, 2006
www.adv-geosci.net/7/387/2006/
© Author(s) 2006. This work is licensed
under a Creative Commons License.

On the potential of sub-mm passive MW observations from geostationary satellites to retrieve heavy precipitation over the Mediterranean Area

S. Pinori, F. Baordo, C. M. Medaglia, A. Mugnai, and B. Bizzarri
Consiglio Nazionale delle Ricerche – Istituto di Fisica dell'Atmosfera e del Clima,
Area di Ricerca di Tor Vergata, Via Fosso del Cavaliere 100, 00133 Roma, Italy

Abstract. The general interest in the potential use of the mm and sub-mm frequencies up to 425 GHz resolution from geostationary orbit is increasing due to the fact that the frequent time sampling and the comparable spatial resolution relative to the "classical" (≤ 89 GHz) microwave frequencies would allow the monitoring of precipitating intense events for the assimilation of rain in now-casting weather prediction models.

In this paper, we use the simulation of a heavy precipitating event in front of the coast of Crete island (Greece) performed by the University of Wisconsin - Non-hydrostatic Modeling System (UW-NMS) cloud resolving model in conjunction with a 3D-adjusted plane parallel radiative transfer model to simulate the upwelling brightness temperatures (TB's) at mm and sub-mm frequencies. To study the potential use of high frequencies, we first analyze the relationships of the simulated TB's with the microphysical properties of the UW-NMS simulated precipitating clouds, and then explore the capability of a Bayesian algorithm for the retrieval of surface rain rate, rain and ice water paths at such frequencies.

Full Article in PDF (PDF, 1967 KB)

Citation: Pinori, S., Baordo, F., Medaglia, C. M., Mugnai, A., and Bizzarri, B.: On the potential of sub-mm passive MW observations from geostationary satellites to retrieve heavy precipitation over the Mediterranean Area, Adv. Geosci., 7, 387-394, 2006. Bibtex EndNote Reference Manager



Search ADGEO

Library Search

Author Search

News

New Tax Regulation for Service Charges

Recent Papers

01 | ADGEO, 27 Jan 2010:
Recent variation of the Las Vacas Glacier Mt. Aconcagua region, Central Andes, Argentina, based on ASTER stereoscopic images

02 | ADGEO, 17 Dec 2009:
First insights on Lake General Carrera/Buenos Aires/Chelénko water balance

03 | ADGEO, 17 Dec 2009:
A Terrestrial Reference Frame (TRF), coordinates and velocities for South American stations: contributions to Central Andes geodynamics