Geophysical Research Abstracts
Vol. 14, EGU2012-4204, 2012
EGU General Assembly 2012
© Author(s) 2012

# Satellite observation of rainfall characteristics on the Tibetan Plateau: Global products and a regional approach

F. Rüthrich, B. Thies, J. Bendix, and C. Reudenbach
Faculty of Geography, University of Marburg

The understanding and monitoring of water balance dynamics on the Tibetan Plateau (TP) is a central aim of the CAME-WET Project (http://www.senckenberg.de/root/index.php?page_id=15097). For this purpose reliable information on precipitation is indispensable. However, the sparse network of climate stations on the plateau-area is a major obstacle to the ground-based observation of its rainfall dynamics. Rainfall amounts and distributions can almost exclusively be assessed from satellites or by means of numerical models.
In the past decades, manifold concepts were developed towards accurate satellite rainfall retrievals. The most promising approaches combine the advantages of passive microwave sensors (PMW) with the high temporal and spatial resolution of infrared sensors on geostationary platforms (GEO/IR). Globally available examples are the TRMM-3B42, CMORPH and PERSIANN products.
The principle aim of this study is to improve regional spaceborn rainfall estimation as against the global products. In several optimization stages an integrated regional retrieval (IRR) is developed, based on the enhanced convective stratiform technique (ECST) and on artificial neural networks. Following the evaluation of the existing retrievals, useful techniques and data sources are determined and implemented.
In this contribution the deficiencies of the existing products in the research area regarding rainfall amounts, distribution and the representation of small scaled topographic variations are presented. The concept of the first stage of the IRR technique is described, as well as its gain in performance under different weather regimes. Basic inputs are contributed by Meteosat 5 and 7 as well as the TRMM 2B31 product, the latter primarily for training and validation purposes.