Quantitative precipitation estimation for typhoon Morakot over oceans

Nan-Ching Yeh¹, Wann-Jin Chen², Jian-Liang Wang³, Jen-Chi Hu⁴, Gin-Rong Liu⁵, Ming-Da Tsai³

¹ School of defense science, Chung Cheng Institute of Technology, National Defense University ² Ta Hwa Institute of Technology



³ Department of Environmental Information and Engineering, Chung Cheng Institute of Technology, National Defense University ⁴ Armed Weather Center, Ministry of National Defense

⁵ Center for Space and Remote Sensing Research, National Central University

Purpose

Using Bayesian approach to estimate the rainfall of typhoon over ocean. In order to reduce the damage to livelihood and economy caused by heavy rainfall associated with severe weather systems such as typhoon Morakot (2009), the accurate rainfall retrieval of typhoon is an important mission for both weather operators and researchers.









2009-08-08 04:11 TMI-GCE-RR (retrieval)





2009-08-08 04:11 TMI-WRF-RR (retrieval)



correlation coefficient = 0.63samples=752



Summary and Future Work

1. PR rainfall products are used for validations in our study and the results show that our Bayesian retrievals and PR-RR have similar rain pattern in horizontal distribution and that the quantitative results agree well with PR products (their correlation coefficient > 0.6).

2. In the future, more typhoon simulations will be added to our database to improve the accuracy of satellite rainfall retrievals. The **RTTOV** Radiative Transfer model will be used in our study.