

Apply GSMaP global rainfall data to improve I-TRaP approach over Taiwan

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Abstract: Satellite observations cover almost the entire surface of Earth and provide the atmospheric parameters including open ocean. Therefore, satellite data is a powerful tool for typhoon monitoring. However, current microwave radiometers are onboard polar orbiting platform such as DMSP and TRMM, which are often lack of data in certain areas and periods because of satellite' orbit and revisiting rate. This poses a difficulty when using the microwave observation data from polar orbiting satellites to estimate a typhoon's rainfall rate. In this study, we try to adopt and use Global Satellite Mapping of Precipitation (GSMaP) data which is developed by JAXA from integrated microwave and infrared data. Using temporal- and spatial-continuous precipitation data set to improve our current Improved Tropical Rainfall Potential (I-TRaP) Technique for typhoon rainfall prediction over Taiwan. The preliminary results suggest a good agreement than TRaP and I-TRaP, which give us an opportunity that using the combined microwave and infrared data for typhoon rainfall prediction in the future.

Keyword: Tropical cyclone, I-TRaP, Rainfall, GSMaP