AOGS 2005


# The results of Dropsonde Observations for Typhoon Surveillance near the Taiwan Region (DOTSTAR) from 2003 to 2004

CHUN-CHIEH WU[1], PO-HSIUNG LIN[1], AND KUN-HSUAN CHOU[1], TIEN-CHIANG YEH[2], SIM ABERSON[3] and MELINDA PENG[4]

[1]*Department of Atmospheric Sciences, National Taiwan University*
[2]*Central Weather Bureau*
[3]*Hurricane Research Division, AOML/NOAA*
[4]*Naval Research Laboratory*

An overview of a international research project and field experiment, Dropsonde Observations for Typhoon Surveillance near the TAiwan Regions (DOTSTAR) will be presented. DOTSTAR builds upon work pioneered at NOAA's Hurricane Research Division (HRD), to improve tropical cyclone (TC) track forecasts and studies of TC dynamics. DOTSTAR employs an ASTRA aircraft to release dropswindsondes from an altitude of 42,000 feet into key areas, or targets, in the environment of typhoons that potentially will affect Taiwan. The data from the flights are assimilated in real time into the operational models such as the Central Weather Bureau Global Forecasting System, the National Centers for Environmental Prediction Global Forecasting System, the global and regional models of the U.S. Navy Fleet Numerical Meteorology and Oceanography Center, the Japanese Meteorological Agency global model, and the United Kingdom Meteorological Office global model. Eleven missions have been conducted around Typhoons Dujuan, Melor, Nida, Conson, Mindulle, Megi, Aere, Meari, Nock-Ten, and Nanmadel since 2003. As the number of missions increase, a statistically significant data impact evaluation will be possible. It is shown that the DOTSTAR dropsonde data have shown an average 20% improvement of the 12-72-h typhoon track forecasts in AVN. The impact of the DOTSTAR data to the other operational global models (e.g., NOGAPS) will be shown in the conference.