

## **8A.6 SENSITIVITY OF TYPHOON FORECASTS TO DIFFERENT SUBSETS OF TARGETED OBSERVATIONS**

**Florian Harnisch \* and Martin Weissmann**

**Deutsches Zentrum für Luft- und Raumfahrt, Institut für Physik der Atmosphäre,  
Oberpfaffenhofen, Germany**

For the first time, joint tropical cyclone (TC) surveillance missions by several aircraft were conducted in the western North Pacific within the framework of the THORPEX Pacific Asian Regional Campaign (T-PARC) 2008.

The collected dropsonde observations were divided into different subsets depending on their location relative to the TC to investigate which observations are most beneficial for typhoon track forecasting. Data denial experiments with the European Centre for Medium-Range Weather Forecasts (ECMWF) global model were performed to analyze the impact of the different dropsonde subsets.

In these experiments, the largest TC track forecast improvements are found for observations in the vicinity of the storm. In contrast, observations in remote regions indicated to be sensitive by singular vectors seem to have a smaller influence with a slight positive tendency on average. Observations in the TC core and center lead to large analysis differences, but only very small mean forecasts improvements.

Times prior to landfall and recurvature are affected more strongly by targeted dropsonde observations, while the impact on the track forecast after recurvature is relatively weak.

\* *Corresponding author address*: Florian Harnisch, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Institut für Physik der Atmosphäre, Oberpfaffenhofen, 82234 Wessling, Germany;  
e-mail: Florian.Harnisch@dlr.de