S02-3

Status of development for assimilation of Himawari-8 Atmospheric Motion Vectors into the Numerical Weather Prediction Systems of Japan Meteorological Agency

Koji Yamashita

JMA/NPD

The Meteorological Satellite Center of Japan Meteorological Agency (JMA) has produced operational Himawari-8 Atmospheric Motion Vectors (AMVs) from three sequential satellite images with time interval of 10 minutes since July 7th, 2015.

Then, the pre-processing system for assimilation of Himawari-8 AMVs into Numerical Weather Prediction (NWP) Systems is being developed at the Numerical Prediction Division of JMA. Three main procedures are being revised. Firstly, the quality indicator (QI, Holmlund 1998) thresholds for rejecting AMVs with the low QI will be improved. Secondly, a process to average AMVs in time and space will be introduced to produce super-observation over Japan. Thirdly, the climatological check is improved.

To check the impacts of these revised procedures compared with the current NWP pre-processing system for MTSAT-2 AMVs, observing system experiments (OSEs) using the JMA's operational global NWP system were performed for two typhoon cases (NOUL and DOLPHIN) in May 2015.

The OSEs revealed that wind forecast errors over the Himawari-8 observation area, especially around Japan, were reduced and mean positional error for typhoon NOUL was reduced after 18-hour forecast lead time. Its reduction rate was about 18 % from 24-hour to 42-hour forecast lead time. (Such reduction of typhoon position error was not observed for typhoon DOLPHIN.) These impacts are expected by introducing the revised NWP pre-processing system. It is planned to refine and introduce this revised NWP pre-processing system for Himawari-8 AMVs by March 2016.

I will give a presentation and discuss about these details at the Conference.