Merger of the Nowcasting Research and Mesoscale Weather Research Working Groups

Gilbert Brunet

CAS MG 9th meeting, 23-25 April 2014
Geneva
Nowcasting Research

- The focus of WWRP Nowcasting Research is to promote detection and forecasting weather over the 0 to 6 hour time frame, to advance nowcasting science, and to undertake capacity building and expertise sharing within the WMO framework.

- Nowcasting systems fill an information need for a variety of users (e.g., emergency services, defence forces, security agencies, the transport industry, hydrologists, the agricultural community, recreational groups and air quality agencies), since such systems often outperform numerical weather prediction in the first several hours of a forecast.

- To develop and implement RDPs and FDPs to advance the underlying science as well as to develop, compare, validate and exchange various nowcasting techniques, and to involve the operational evaluation outcomes.
Mesoscale Weather Forecasting Research

• The purpose of Mesoscale Weather Forecasting Research is to promote weather forecasting research on the meso-gamma scale (~500m – 3km), covering time scales from 0 ~48h, and to strengthen international cooperation, knowledge transfer and capacity building in this field;

• Mesoscale prediction systems are driven toward this high resolution because the largest impacts on society tend to be regional or even local in nature;

• To promote, organize and/or endorse end-to-end weather research and development projects (RDPs) that advance understanding of weather processes, improve forecasting techniques (e.g data assimilation) and increase the utility of forecast information with an emphasis on high-impact weather.
Highlights

• The 3rd WMO International Symposium on Nowcasting and Very Short Range Forecasting (WSN12) held in 2012 in Rio de Janeiro (Brazil), reviewed the capabilities and requirements for improved forecasts in the 0-6 hour timeframe with emphasis on forecasts of high impact weather (heavy rain, hail, lightning, high winds, snowstorm, blizzards, etc.). The Symposium had participation of 166 scientists from 21 countries;

• Beijing 08, Summer Olympic Games, China;

• Science of Nowcasting Olympic Weather for Vancouver 2010 (SNOW V10) project, Canada; (legacy with FROST in Sochi 2014)
Verification of hourly precipitation forecasts against radar
Same validity time, available at same time to forecasters

**NDP** better than older **UKV** forecast at all ranges

**NDP** better than **STEPS** extrapolation/merged nowcast
Future Directions

Closer Collaboration between Nowcasting Research and Mesoscale Weather Forecast Research Community

- High resolution modeling utilization
  - High impact weather forecasts
  - Quantitative Estimate of Precipitation
- Seamless approach needed from minutes to 2-day forecast
- Develop Advanced Data Assimilation Technique
  - Radar Reflectivity

CAS XVI Doc 4.2: Endorsement of the merger of the two WGs as decided at the last WWRP SSC annual meeting.
Thank you!
Merci!