



Very-short range forecasting system for 2018 Pyeongchang Winter Olympic and Paralympic games

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The 23rd Olympic Winter and the 13th Paralympic Winter Games will be held in Pyeongchang, Republic of Korea respectively from 9 to 25 February 2018 and from 9 to 18 February 2018. The Korea Meteorological Administration (KMA) and the National Institute for Meteorological Science (NIMS) have the responsibility to provide weather information for the management of the Games and the safety of the public. NIMS will carry out a Forecast Demonstration Project (FDP) and a Research and Development Project (RDP) which will be called ICE-POP 2018. These projects will focus on intensive observation campaigns to understand severe winter weathers over the Pyeongchang region, and the research results from the RDP will be used to improve the accuracy of nowcasting and very short-range forecast systems during the Games. To support these projects, NIMS developed Very-short range Data Assimilation and Prediction System (VDAPS), which is run in real time with 1 hour cycling interval and up to 12 hour forecasts. The domain is covering Korean Peninsular and surrounding seas with 1.5km horizontal resolution. AWS, windprofiler, buoy, sonde, aircraft, scatwinds, and radar radial winds are assimilated by 3DVAR on 3km resolution inner domain. The rain rate is converted into latent heat and initialized via nudging. The visibility data are also assimilated with the addition of aerosol control variable. The experiments results show the improvement in rainfall over south sea of Korean peninsula. In order to reduce excessive rainfalls during first 2 hours due to the reduced cycling interval, the data assimilation algorithm is optimized.