Improvement of Advanced Storm-scale Analysis and Prediction System (ASAPS) on Seoul Metropolitan Area, Korea

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Dangerous weather such as severe rain, heavy snow, drought and heat wave caused by climate change make more damage in the urban area that dense populated and industry areas. Urban areas, unlike the rural area, have big population and transportation, dense the buildings and fuel consumption. Anthropogenic factors such as road energy balance, the flow of air in the urban is unique meteorological phenomena. However several researches are in process about prediction of urban meteorology. ASAPS (Advanced Storm-scale Analysis and Prediction System) predicts a severe weather with very short range (prediction with 6 hour) and high resolution (every hour with time and 1 km with space) on Seoul metropolitan area based on KLAPS (Korea Local Analysis and Prediction System) from KMA (Korea Meteorological Administration). This system configured three parts that make a background field (SUF5), analysis field (SU01) with observation and forecast field with high resolution (SUF1). In this study, we improve a high-resolution ASAPS model and perform a sensitivity test for the rainfall case. The improvement of ASAPS include model domain configuration, high resolution topographic data and data assimilation with WISE observation data.