



Verification and Analyses of Air Flow Characteristics on Urban Area Using Intensive Observation Data in Gangnam/Seolleung, Korea

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In this study, the values of wind direction and wind speed observed by Meteorological Sciences are analyzed with model values after the numerical simulation was performed using WRF-CFD model for seolleung area in Gangnam. For this, the test-bed for seolleung area in Gangnam was constructed. Boundary input data of 2 km x 2 km for model was generated by using geographic information system(GIS) data. And then, the wind component and turbulent kinetic energy of mesoscale model were extracted in order to construct WRF-CFD model prototype system. These data was used as initial and boundary data for CFD model simulation. Analysis period is 2014.11.4. ~ 2014.11.10. After model simulation during these days, the wind direction from WRF model and WRF-CFD model was very similar to AWS observations. In wind speed, the value by WRF model was over estimated in general. The wind speed from WRF-CFD model represented good results with AWS observations, although the results of WRF-CFD model showd similar trends with that of WRF model. In all observation point, the wind speed from WRF model was over estimated because WRF model could not reflect building effects. On the other hand, the value from WRF-CFD model was closed to AWS observations as WRF-CFD model was possible to reflect building effects.