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Coupling building-resolving LES with meso-scale NWP: effect of the simulation parameters KYONGMIN YEO, IBM TJ Watson Research Center — The effects of the simulation parameters on the scalar dispersion in an urban area are reported. To study scalar dispersion under realistic meteorological conditions, the building-resolving large-eddy simulations (LES) are driven by downscaling boundary conditions from a numerical weather prediction model (NWP). Here, we focus on the changes in the dispersion characteristics under the different downscaling modes and computational parameters. Two sets of numerical simulations are performed for transient morning and unstable day-time atmospheric boundary layers. It is shown that the scalar dispersion is strongly affected by the downscaling method. The computational domain size also has a significant effect on the scalar dispersion even for the ground release events.

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