

**P69** Investigation of a high-impact precipitation event over the Tokyo metropolitan area using a nested configuration of WRF down to the LES scale.

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The WRF-NOAHMP model with advanced representations of land-atmosphere exchange over complex terrain, the atmospheric boundary layer, and convection initiation is applied to a case during the WMO Research and Development Project Tokyo Metropolitan Area Convection Study for extreme weather resilient Cities (TOMACS). We investigate in detail land-atmosphere processes that evolved during a severe convective event in the Tokyo Metropolitan Area in the afternoon of September, 2nd 2013. Focus is set on details of the evolution of a tornadic supercell. The simulation is initialized with the ECMWF operational analysis improved by 3DVAR in the outermost domain with 2700 m horizontal resolution. For the assimilation, observations archived in the ECMWF data archive as well as additional data collected during TOMACS are applied. With 3 additional nests, the resolution is refined to 100 m in the innermost domain. The model results are compared with observations available during TOMACS to characterize the short-range forecast performance of WRF at different resolutions as well as to study land-atmosphere exchange and the organization of convection leading to the development and evolution of supercells such as storm relative helicity, the rotating updraft as well as convective inflow and outflow. First results will be presented at the workshop.