

Sensitivity of observable output of modeled microphysics to stochastically perturbed parameters

Tomislava Vukicevic¹, Derek Posselt², Aleksa Stankovic¹

This study investigates sensitivity of cloud and precipitation parameterized microphysics to stochastic representation of parameter uncertainty to evaluate a potential to use satellite remote sensing to estimate properties of such uncertainty representation for the purpose of ensemble modeling. A stochastically perturbed parameterization scheme (SPP) is applied to multiple microphysical parameters within a lagrangian column model. The experiments based on ensemble simulations indicate a high sensitivity of simulated microphysics-sensitive satellite observables to the SPP properties. The analyses suggest a strong potential to use the satellite observations to estimate the modeled stochastic uncertainty of the parameterizations. Further analyses will be presented at the conference.