



## **Stochastic parameterization testing with NOAA's developmental Global Ensemble Forecast System**

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In the next few years, the US National Weather Service will be switching the production of its global ensemble forecast system (GEFS) from the current spectrally based dynamical core to a finite-volume dynamical core (FV3). A suite of stochastic parameterizations, some developed at other centres, have been developed for the spectral and then adapted for the FV3 dynamical core. The stochastic parameterizations include the SPPT scheme developed at ECMWF and a stochastically perturbed boundary-layer humidity scheme (SHUM) developed within NOAA. The stochastic parameterizations appear more active in the FV3 developmental system with the same parameter settings used in the spectral-based system, and probabilistic skill scores are competitive with or better than with the old spectral core. This talk will review the particular implementation of the stochastic parameterizations in FV3, compare probabilistic forecasts between the old and new system, and discuss the underlying reasons for greater activity of stochastic parameterizations in FV3.