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Seasonal ensemble simulation of KIM with stochastically perturbed forcing

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The Korean Integrated Model (KIM) has been developed for a new global atmospheric model system of the Korea Meteorological Administration (KMA). KIM consists of a spectral-element non-hydrostatic dynamical core on a cubed grid sphere and a state-of-the-art physics suite, and initial conditions can be obtained via the advanced hybrid four-dimensional ensemble variational data assimilation (4DEnVar) over its native grid. The 12-km numerical weather prediction (NWP) system has been launched in a real-time forecast framework, which is scheduled to become operational in 2020.

KIM's application is now extending to sub-seasonal to seasonal (S2S) prediction for which much effort has been made in developing atmospheric model, coupling ocean and chemistry, and evaluating on seasonal simulation framework with the prescribed surface forcing in land and oceans. In addition, model uncertainties are being addressed in KIM by perturbing model tendencies and uncertain parameters to overcome the limited predictability at long-range simulations. Here, we examine the KIM's capability on seasonal ensemble simulation with stochastic forcing generated by spectral transform on cubed-grid sphere. Further detail will be presented in the conference.