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(Virtual Talk)
NOAA is undertaking the development of a Seasonal Forecast System version 1 (SFSv1) to replace the current Climate Forecast System version 2 (CFSv2). The SFS's development is primarily based on the capabilities of the NOAA Global Ensemble Forecast System (GEFSv13) which utilizes a non-hydrostatic Finite-volume dynamical core and is tailored for extended-range forecasting at a 25 km resolution. SFSv1, intended to operate at approximately 100 km, with a target resolution of about 50 km, requires careful examination to ensure the effectiveness of the existing physics suite and dynamics at these resolutions. Within the 50 km to 100 km resolution range, the hydrostatic assumption remains valid with less computing costs, implying that the non-hydrostatic option might be unnecessary. Sensitivity experiments, including both AMIP-type and fully coupled experiments, have been conducted to
compare the hydrostatic and non-hydrostatic options. The schemes and parameters of artificial dissipation, horizontal advection, and vertical remapping have been tuned to align with the hydrostatic option. The initial findings indicate that hydrostatic forecasts demonstrate comparable performance compared to non-hydrostatic forecasts. The issues arising from the switch to the hydrostatic option for SFS are being examined.
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Zhou-Xiaqiong.pdf
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S2S Community Workshop
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