

Towards Seasonal Verification in the Environmental Modeling Center (EMC) Verification System (EVS)

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Seasonal forecasts are increasingly being requested and utilized by a variety of public and private sectors including agriculture, water management, environmental resources management, energy production and distribution, financial markets, transportation, and insurance. The Climate Forecasting System (CFS) is an operational seasonal prediction model at the National Centers for Environmental Prediction (NCEP) since 2011. To improve skill and predictability of seasonal forecasts, a next generation model called the Seasonal Forecast System (SFS) is currently being developed as a part of the Unified Forecast System (UFS). NCEP's Environmental Modeling Center (EMC) has recently developed and implemented version 1.0 of the EMC Verification System (EVS) to verify the operational NCEP models, and produce verification statistics and graphics using the METplus software developed at the Developmental Testbed Center. This presentation will focus on the development of the seasonal component of EVS version 2.0. A verification package is being developed for verifying the currently operational CFSv2, which will be utilized as a baseline model for comparison with future seasonal models in operation like the SFS. The verification metrics for the seasonal component of EVS v2.0 will be derived from the 2021 DTC UFS Metrics Workshop. Current metrics and verification graphics being developed include Root Mean Squared Error, Bias, and Anomaly Correlation Coefficient of 500-hPa Geopotential height and 850-hPa Temperature over the Northern Hemisphere, Southern Hemisphere and Tropics. Additional metrics to be included, like Outgoing Longwave Radiation, Sea Surface Temperature, and Oceanic Nino Index errors, biases, and predictability skills, will also be discussed.