

Weekly Report

SCSB/CISESS
Cooperative Research Program Division (CoRP)
STAR/NESDIS
National Oceanic and Atmospheric Administration (NOAA)

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Products and Applications

Validation of the Blended Rain Rate Product: CISESS Scientist Patrick Meyers did an analysis of OSPO's blended rain rate product (brr) under the blended calibration/validation task this year. He found that this product did well at identifying convective precipitation. However, it often significantly underestimated the rain rate, especially when the rain rate was high.

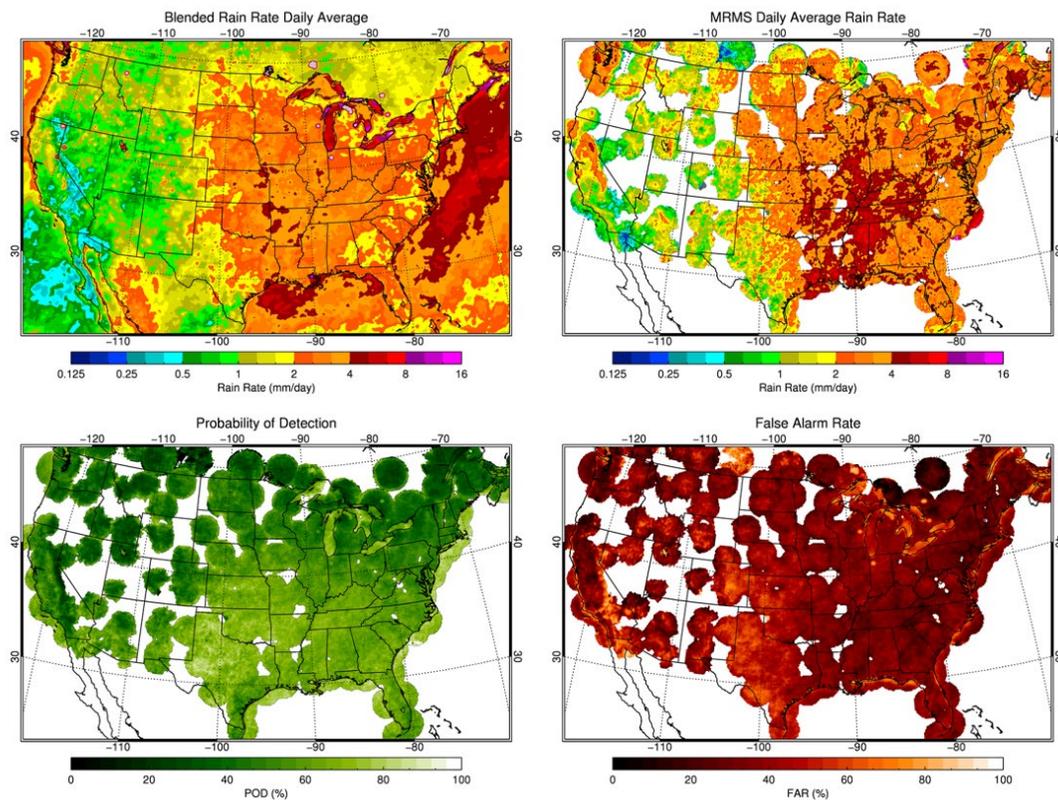


Figure: brr daily average (top left), MRMS observations (top right), probability of detection (bottom left) and false alarm rate (bottom right).

A monitoring site is currently available at: <http://cics.umd.edu/pmeyers/brr/>. (Patrick Meyers & Ralph Ferraro, ralph.r.ferraro@noaa.gov, Funding: JSTAR).

Model Bias Limits Subseasonal to Seasonal (S2S) Forecast Skills: CISESS Consortium Scientist James Kinter, Professor and Director of George Mason’s University’s Center for Ocean-Land-Atmosphere Studies (COLA), has just completed his CISESS task on the role of bias in limiting S2S forecast skill. The simulated 2-meter air temperature and precipitation from a selection of model hindcasts from the Climate Forecast System (CFSv2) and the Community Climate System Model (CCSM4) have been assessed using a variety of skill metrics at leads of 1 through 4 weeks in each of the four seasons. The results showed that:

- While root-mean-squared error (RMSE) increases with lead, anomaly standard deviation decreases, indicating a decrease in variability with lead in the hindcasts compared to observations.
- Skill is generally highest in the winter and lowest in summer, particularly in North America.
- Seasonal ranked probability skill score (RPSS) generally correlates with anomaly correlation coefficient (ACC). Skill drops off sharply from week 1 to 2 (see figure).

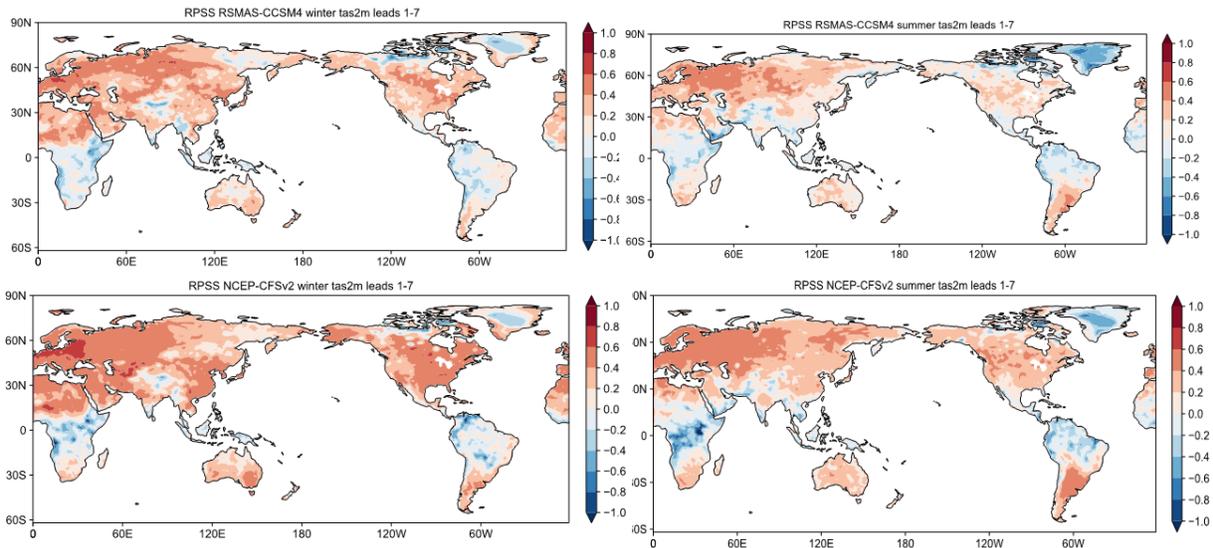


Figure: Winter and summer RPSS for RSMAS-CCSM4 (top) and NCEP-CFSv2 (bottom) for week 1 forecasts. “1” represents a perfect score. Negative values indicate that the forecast performs worse than a climatological forecast.

This issue is being evaluated for development of the coupled **Unified Forecast System (UFS)**. Kinter’s group starts on four new UFS projects this month.

- Unified Forecast System Research-to-Operations Project (Task Leader: James Kinter)
- UFS Model Infrastructure - Workflow Coordination (Task Leader: Benjamin Cash)
- Contribution to the Coupled Model Development Sub-project (Task Leader: Cristiana Stan)
- Validating Coupled Land-Atmosphere Processes in UFS (Task Leader: Paul Dirmeyer)

(Jim Kinter, jkinter@gmu.edu, Funding: NCEP/CPC, OSTI/OWAQ – now WPO)