



*Supplement of*

**A statistical–dynamical approach for probabilistic prediction of sub-seasonal precipitation anomalies over 17 hydroclimatic regions in China**

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# Supplement

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Figure S1 to S4 show the correlation maps between pentad mean 10-60 d signals of U850, H200, H500, H850 and precipitation over Region 1 (Inland rivers in Xinjiang).

Figure S5 to S8 show temporal correlation coefficient (TCC) of the ensemble mean of U850, H200, H500, H850 intraseasonal signals derived from the ECMWF model compared to the ERA5 reanalysis data in May.

Figure S9 shows the forecast median, quantiles ranges and observed value against time for sub-seasonal forecasts over Region 3 (Inland Rivers in Inner Mongolia) at a lead time of 0-day.

Figure S10 to S14 show the CRPS skill score of calibration model, bridging models, and merged forecasts at different lead times in June, July, August, September, and October.

Figure S15 to S19 compare the CRPS skill of merged forecasts to the CRPS skill score of calibrated forecasts, maximum, mean, and minimum CRPS skill score of bridging forecasts in June, July, August, September, and October.

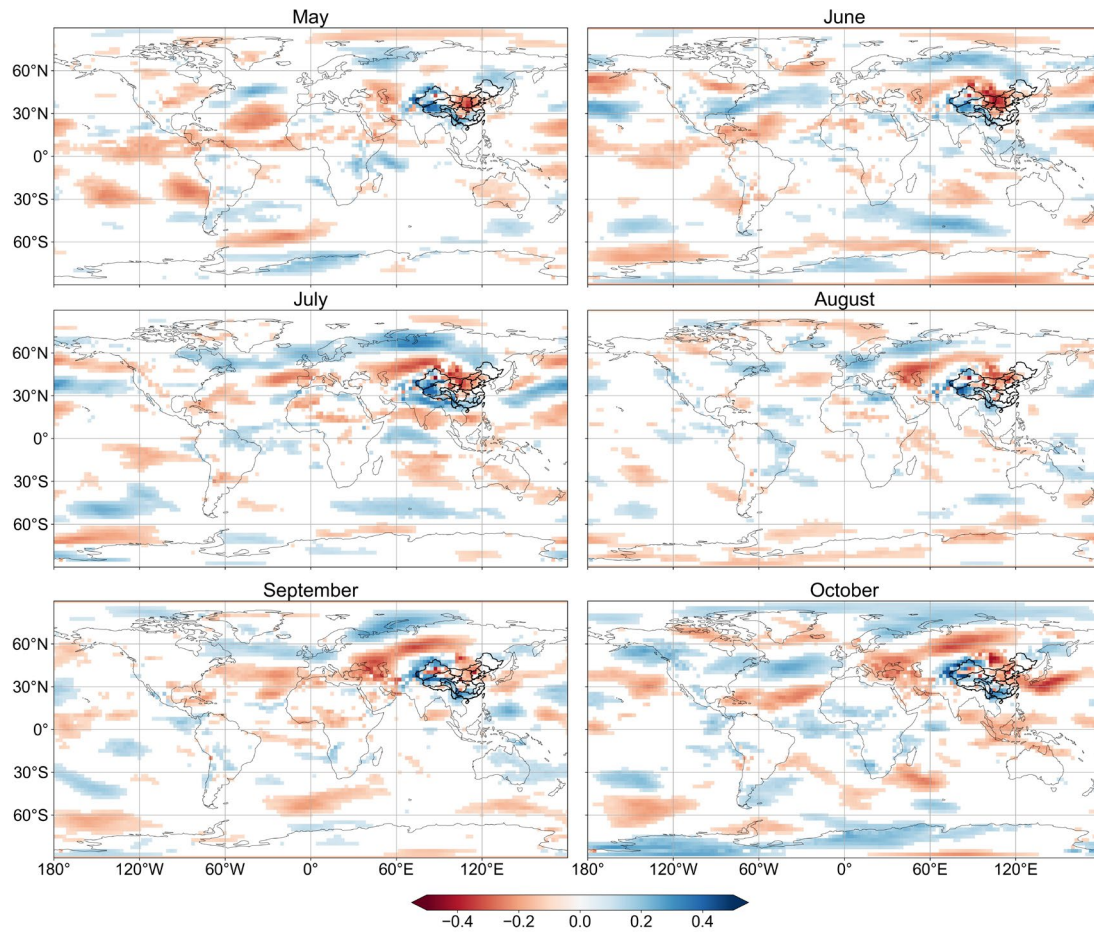


Figure S1. Correlation coefficient between pentad mean 10–60 d signals of U850 and precipitation over Region 1 (inland rivers in Xinjiang) in different months. Correlation coefficients that are statistically significant at the 5 % level are shaded.

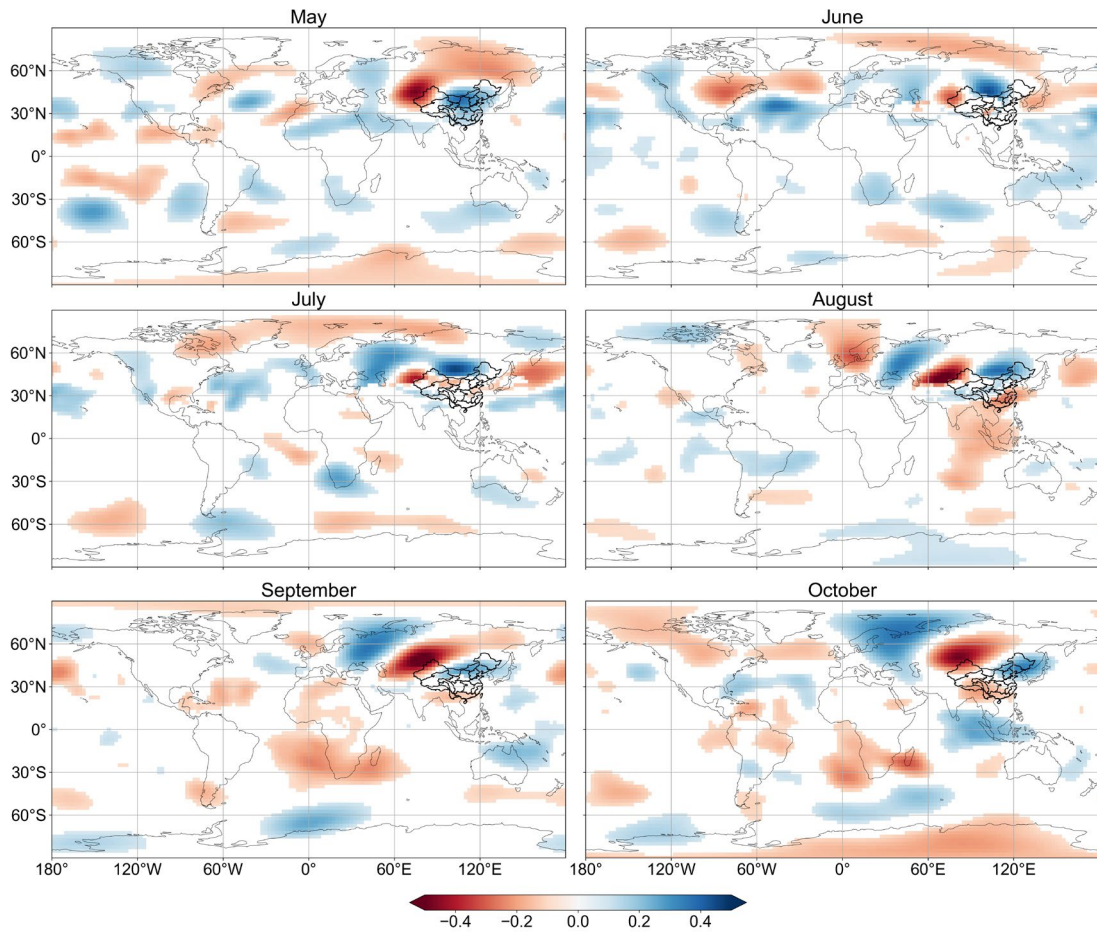


Figure S2. Same as Figure S1, but for H200.

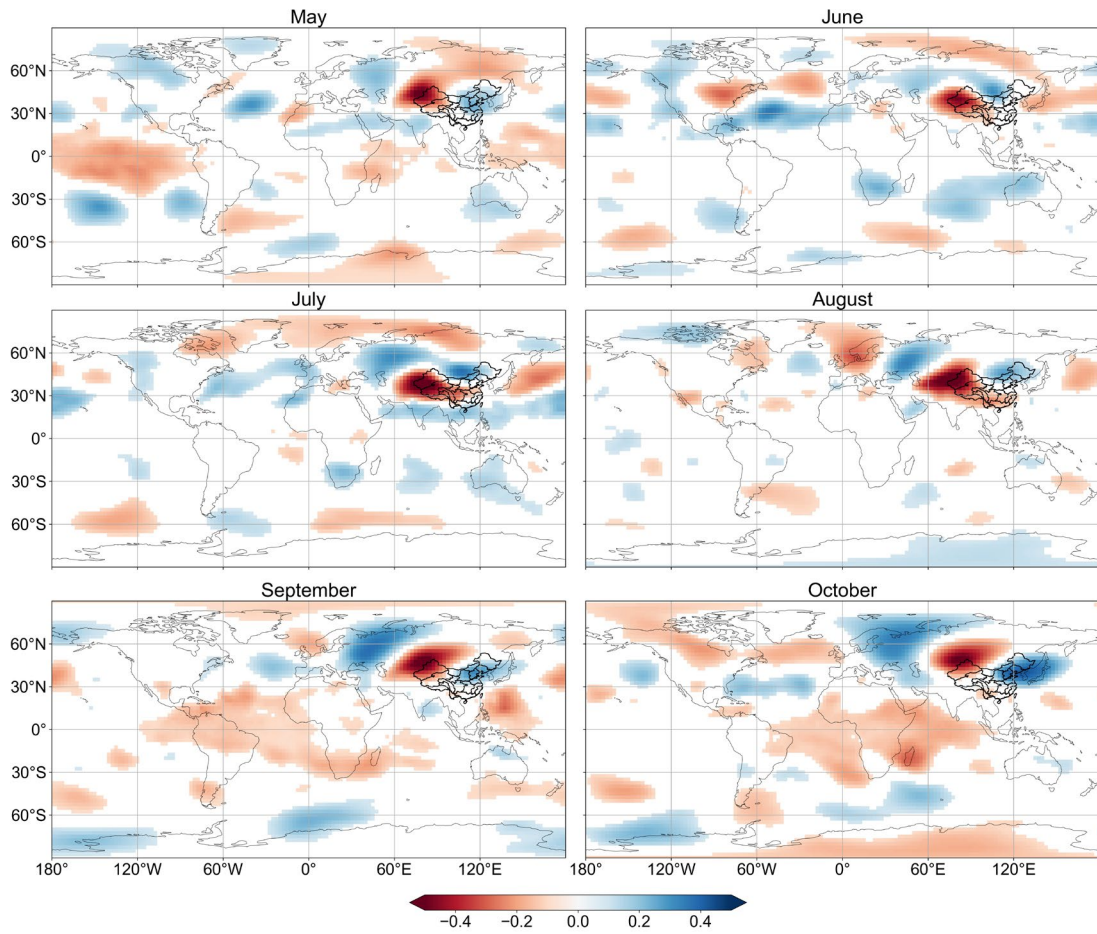


Figure S3. Same as Figure S1, but for H500.

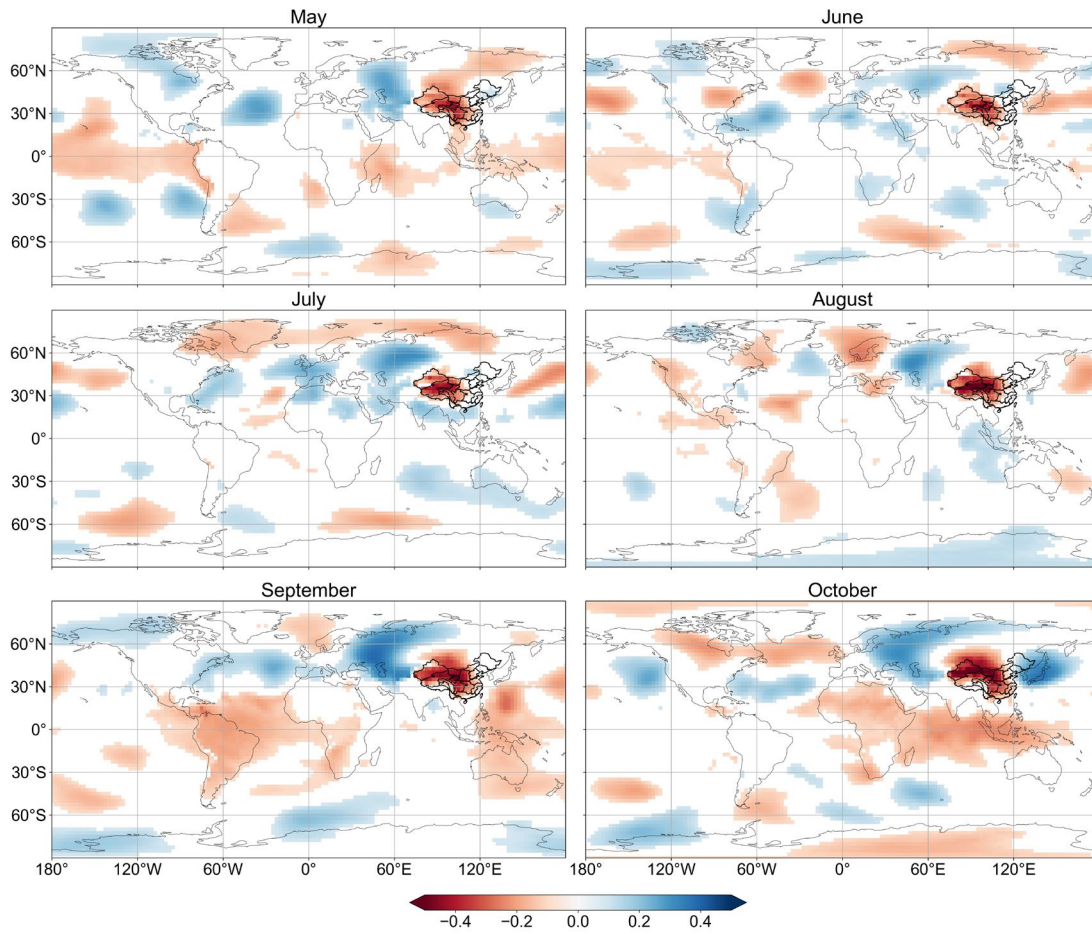


Figure S4. Same as Figure S1, but for H850.

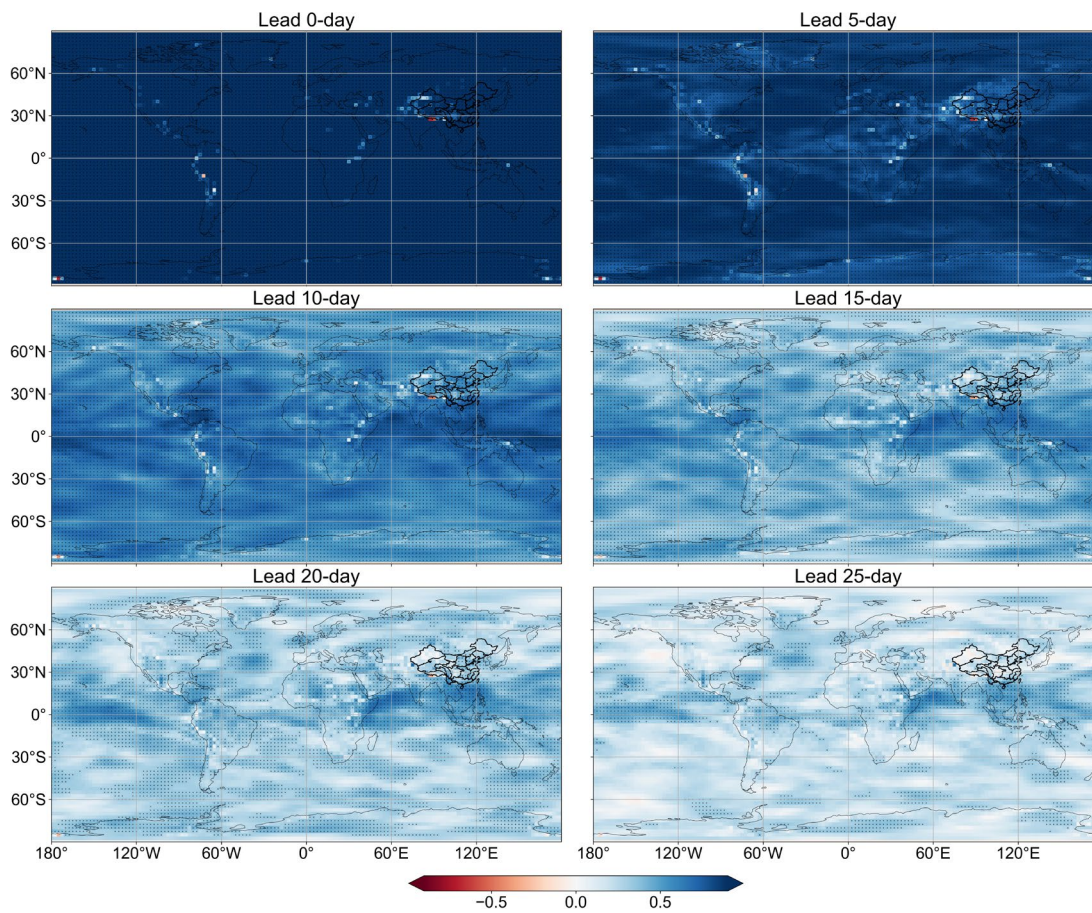


Figure S5. Temporal correlation coefficient (TCC) of the ensemble mean of U850 intraseasonal signals derived from the ECMWF model compared to the ERA5 reanalysis data in May. Correlation coefficients that are statistically significant at the 5 % level are shaded.

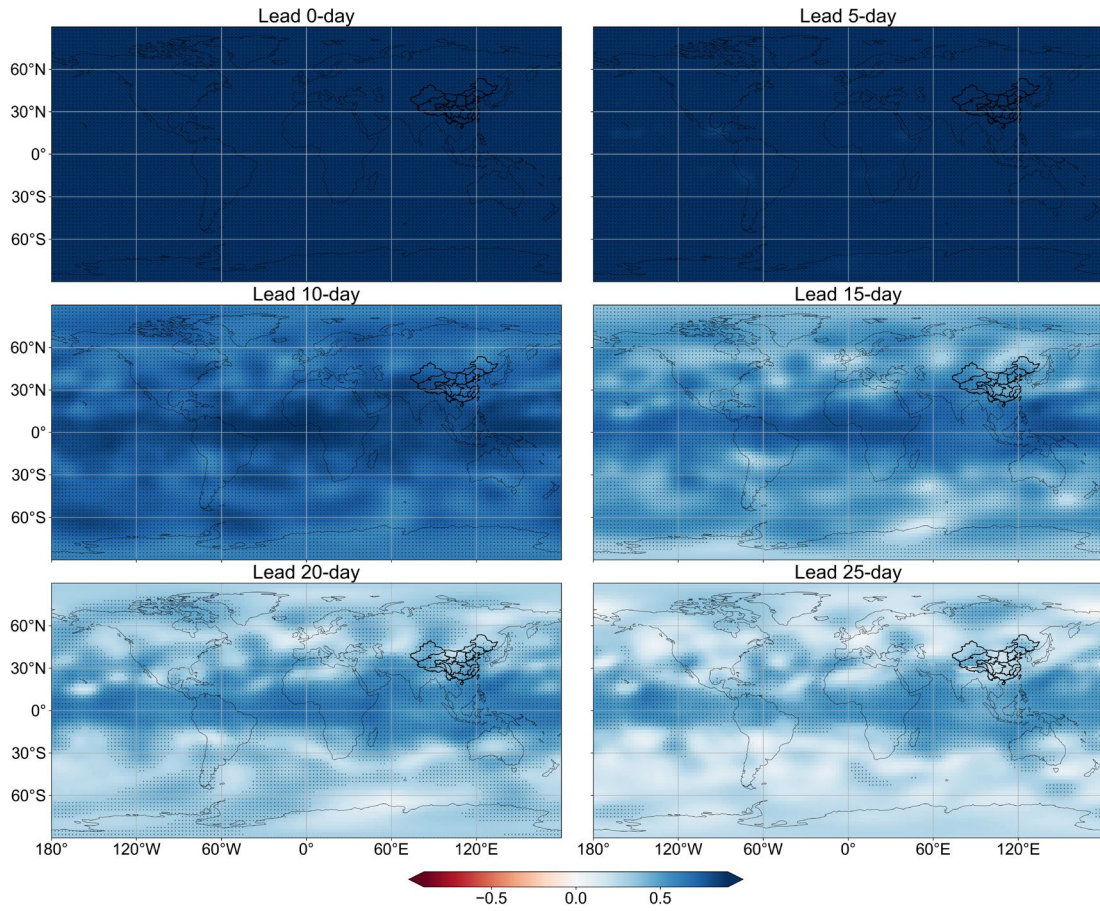


Figure S6. Same as Figure S5, but for H200.

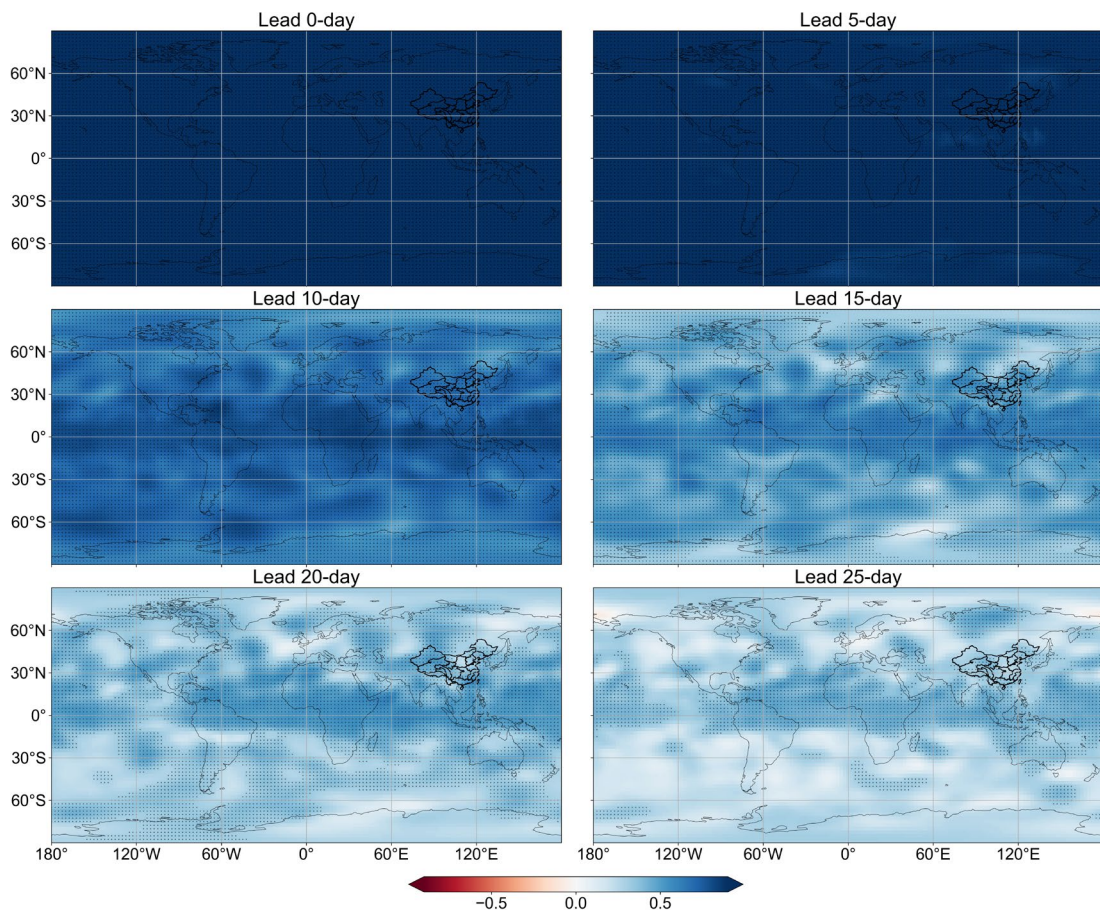


Figure S7. Same as Figure S5, but for H500.

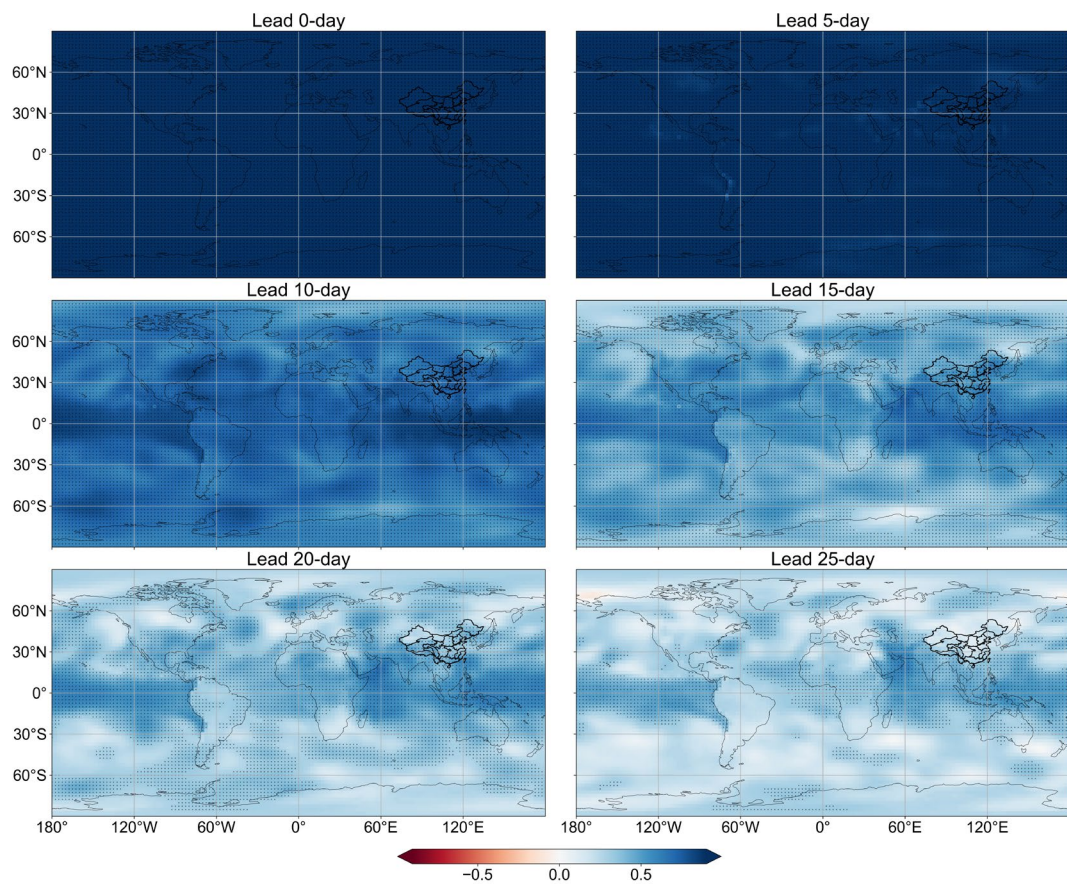


Figure S8. Same as Figure S5, but for H850.



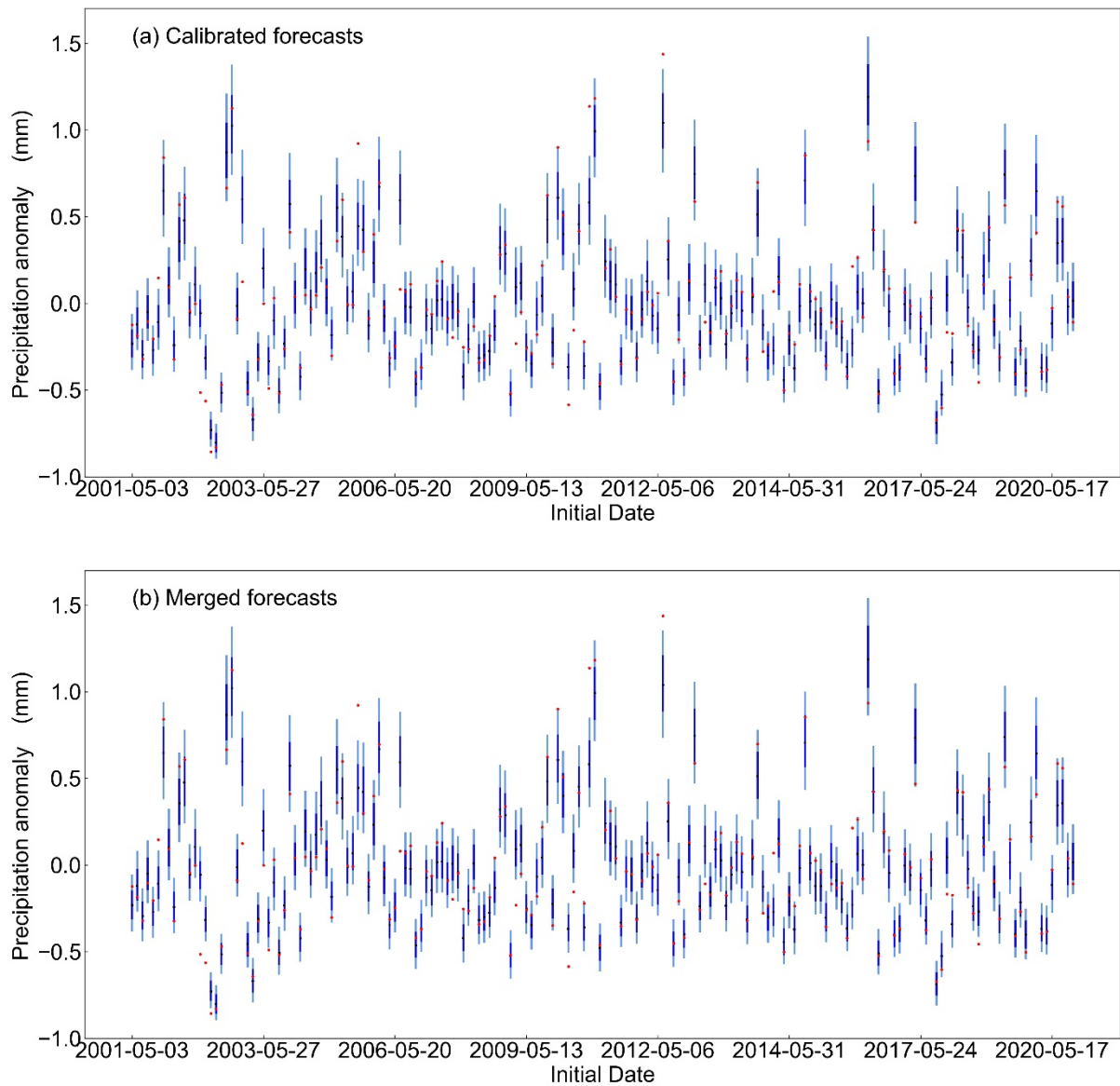


Figure S9. Forecast median, quantiles ranges and observed value against time for sub-seasonal forecasts over Region 3 (Inland Rivers in Inner Mongolia) at a lead time of 0-day. The black dots, forecast median; dark blue vertical line, forecast [0.25, 0.75] quantile range; light and dark blue vertical line, forecast [0.10, 0.90] quantile range; red dot, observed precipitation anomaly.

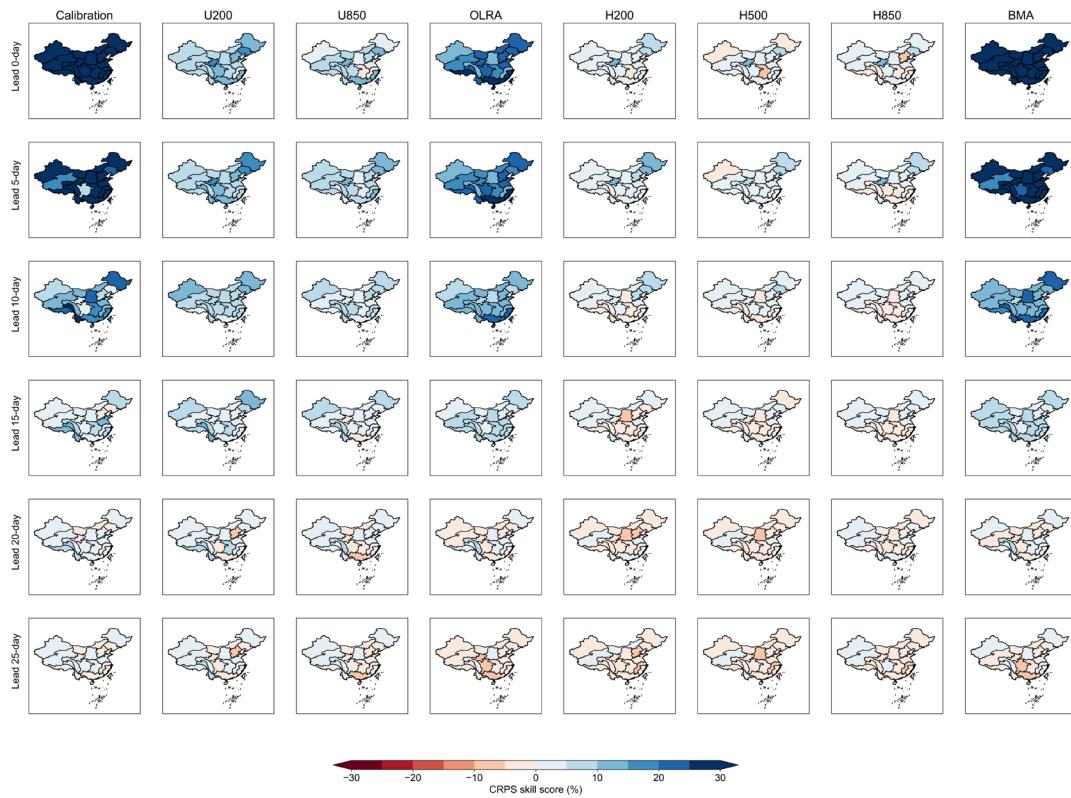


Figure S10. CRPS skill score of calibration model, bridging models, and merged forecasts at different lead times in June.

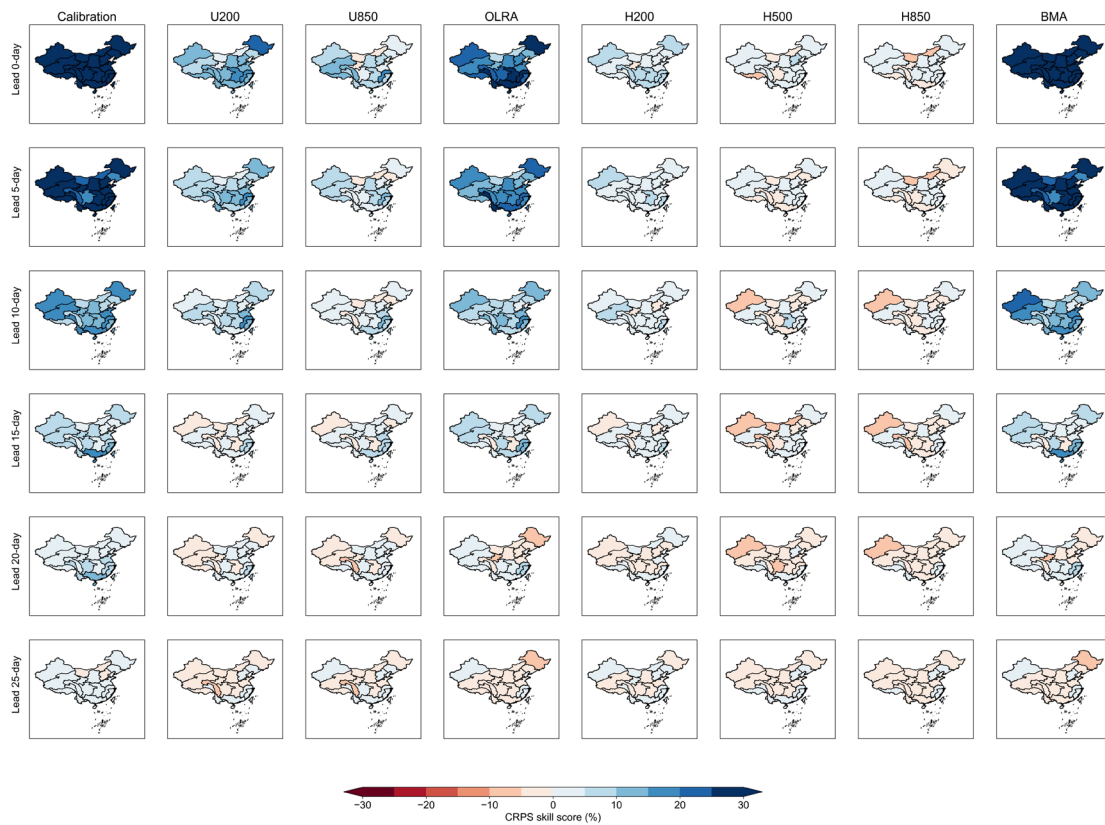


Figure S11. Same as Figure S10, but in July.

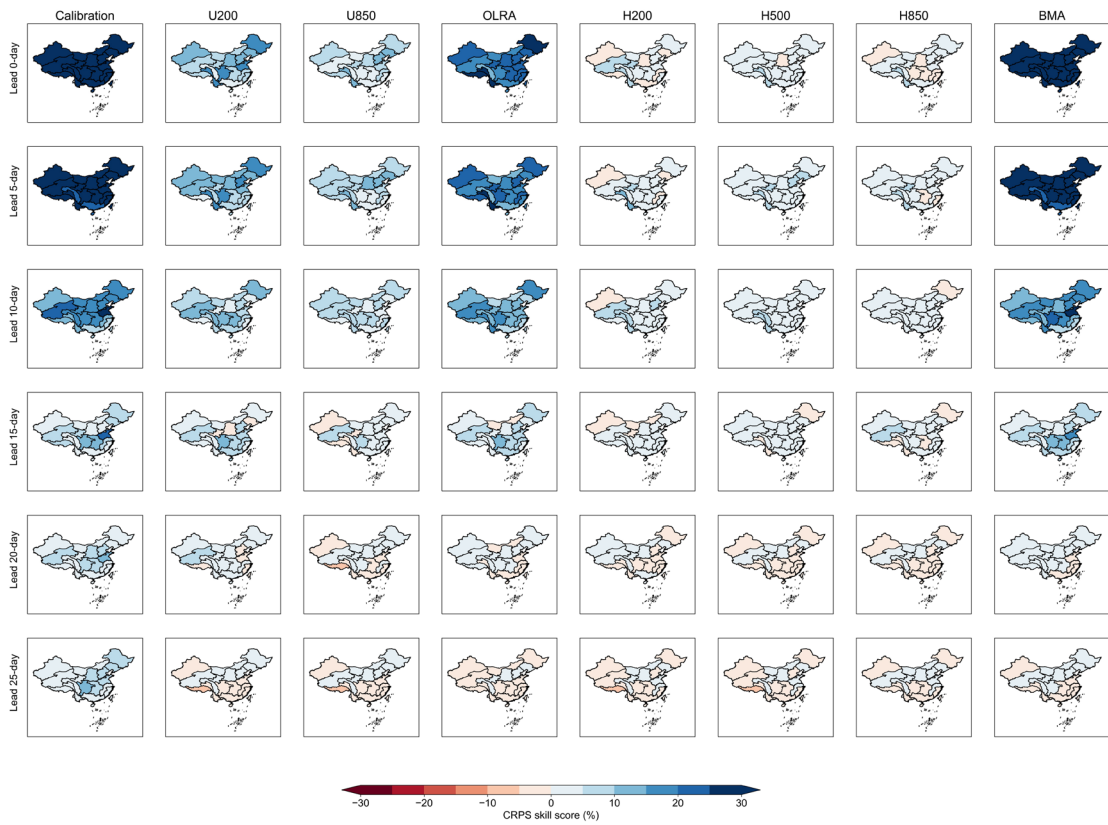


Figure S12. Same as Figure S10, but in August.

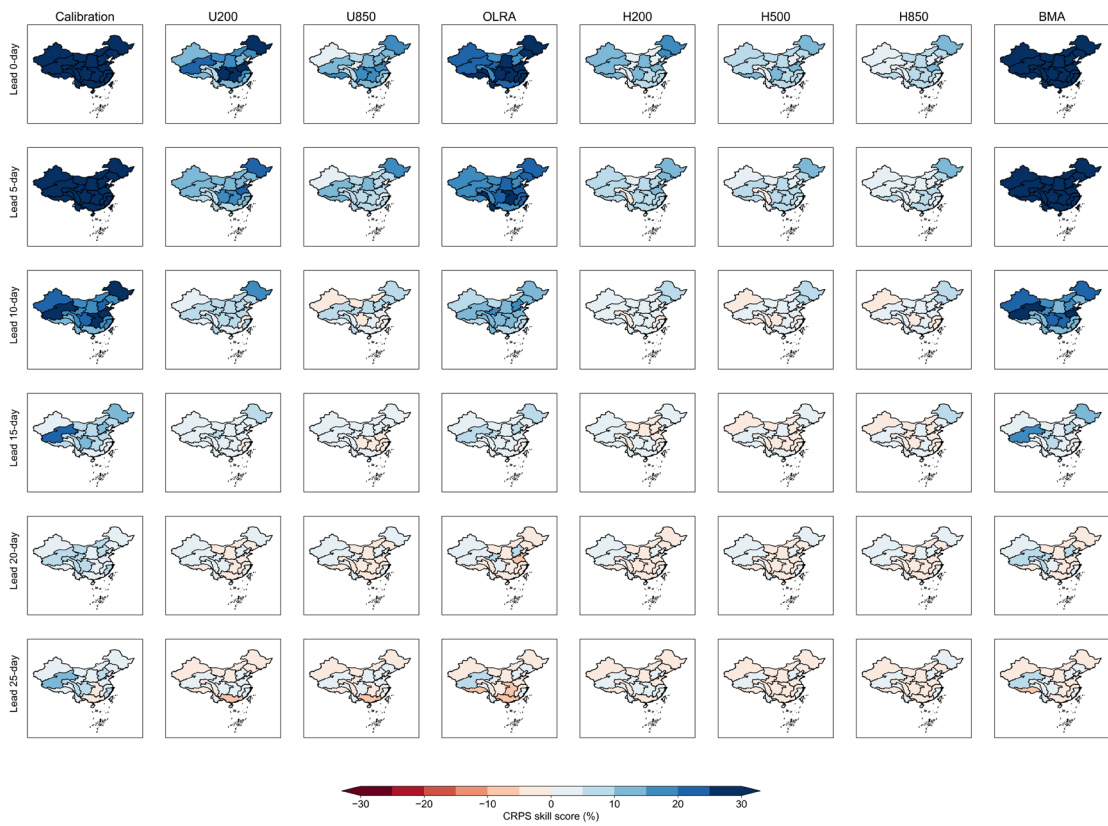


Figure S13. Same as Figure S10, but in September.

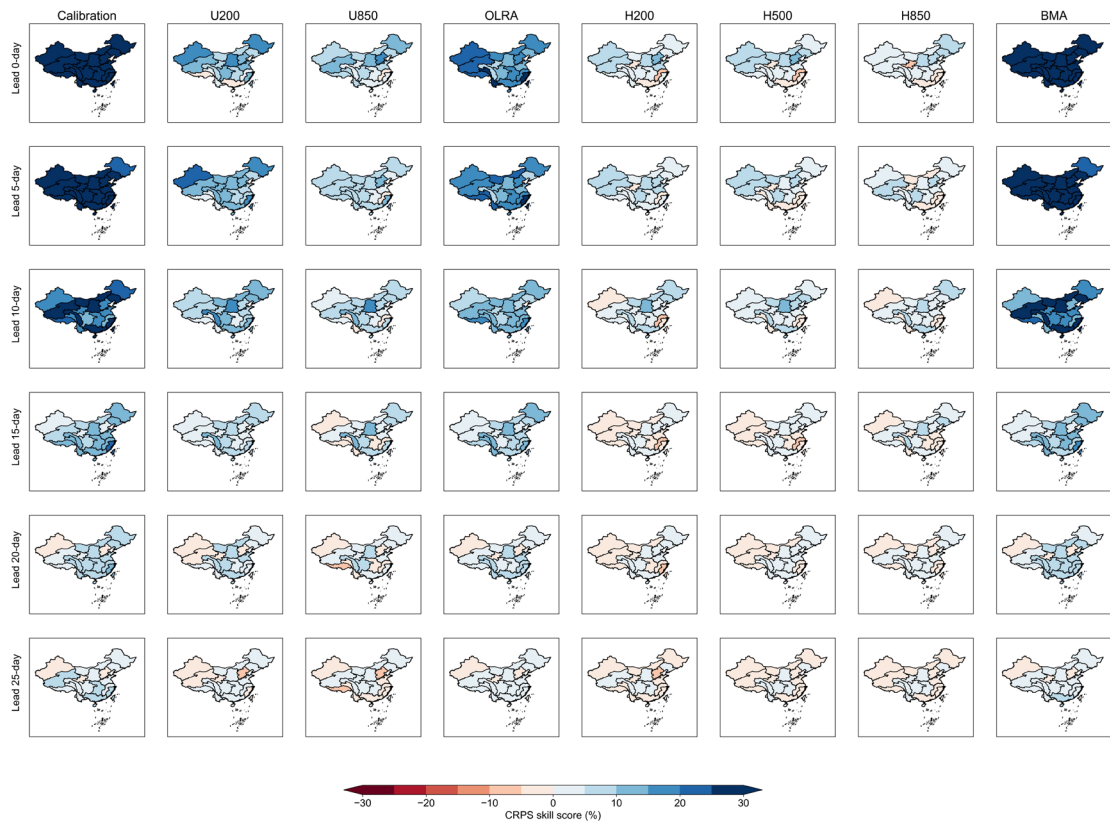


Figure S14. Same as Figure S10, but in October.