



## **Probabilistic seasonal forecast verification with the Climate Explorer**

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Seasonal climate forecasts are made using multi-model ensembles. Contrary to climate change projections, the skill of the forecasts can be verified against observations using old forecasts and hindcasts. In practice the small number of forecasts (15-45) is a severe limitation, as the skill depends strongly on the region and season.

We present a web-based system to produce charts and maps of the skill of operational seasonal forecast systems using a variety of measures. It is part of the KNMI Climate Explorer ([climexp.knmi.nl](http://climexp.knmi.nl)), and presently contains data from the ECMWF S2 and NCEP CFS operational forecast systems, as well as the Demeter research experiment. The verification measures have been developed in the RCLIM project, and include deterministic measures such as the ensemble mean correlation, RMSE and MAE, as well as probabilistic measures such as the Brier Score, its decomposition into resolution, reliability and uncertainty, and the ROC curve. These are available both for time series (area-averaged or all grid points in a region) and as spatial maps. More measures, and estimates of the uncertainties of the skill scores, are planned.

The verification system allows seasonal forecasters and climate researchers to quickly explore the predictability of the short-term climate with current state-of-the-art models.