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Title: On the reliability of ECMWF's seasonal forecasts

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Abstract:

Seasonal climate forecasts are being used increasingly across a range of application sectors. A recent UK governmental report asked: How good are seasonal climate forecasts on a scale of 1-5 (where 5 is very good), and how good can we expect them to be in 30 years time? Seasonal climate forecasts are made from ensembles of integrations of numerical models of climate. We argue that <93>goodness<94> should be assessed primarily in terms of the probabilistic reliability of these ensemble-based forecasts and that a '5<92> should be reserved for systems which are not only reliable overall, but where, in particular, small ensemble spread is a reliable indicator of low ensemble forecast error. We study the reliability of regional temperature and precipitation forecasts of the current operational seasonal forecast system of the European Centre for Medium-Range Weather Forecasts, universally regarded as a world leading operational institute producing seasonal climate forecasts. A wide range of <93>goodness<94> rankings, depending on region and variable (with summer forecasts of rainfall over Northern Europe performing exceptionally poorly) is found. Finally, we discuss the prospects of reaching <93>5<94> across all regions and variables in 30 years time.

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