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Seasonal Forecasts for Northern Hemisphere Winter 2015/16

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The northern winter of 2015/16 gave rise to the strongest El Niño event since 1997/8. Central and eastern Pacific sea surface temperature anomalies exceeded three degrees and closely resembled the strong El Niño in winter of 1982/3. A second feature of this winter was a strong westerly phase of the Quasi-Biennial Oscillation and very strong winds in the stratospheric polar night jet. At the surface, intense extratropical circulation anomalies occurred in both the North Pacific and North Atlantic that were consistent with known teleconnections to the observed phases of ENSO and the QBO. The North Atlantic Oscillation was very positive in the early winter period (Nov-Dec) and was more blocked in the late winter. Initialised climate predictions were able to capture these signals at seasonal lead times. This case study adds to the evidence that north Atlantic circulation exhibits predictability on seasonal timescales, and in this case we show that even aspects of the detailed pattern and sub-seasonal evolution were predicted, providing warning of increased risk of extreme events such as the intense rainfall which caused extreme flooding in the UK in December.