

SESSION: (B2) Modelling issues in S2D prediction

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The importance of stratospheric initial conditions on wintertime seasonal predictability in the Euro-Atlantic sector and implications for the signal-to-noise paradox

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In this study we investigate the influence of atmospheric initial conditions on the predictability of the NAO in seasonal hindcast experiments. Three ensemble hindcast experiments are presented: an experiment initialised from a reanalysis that assimilates a comprehensive set of observations, one initialised from a reanalysis that assimilates only surface observations and one initialised from a random atmospheric initial condition. The skill of the NAO is analysed in the different hindcast experiments. The stratospheric initial conditions, and in particular the QBO teleconnection to the NAO, emerge as an important source of skill in the hindcast experiments. However, the QBO-NAO teleconnection appears to be somewhat weaker than in the observations, which results in a signal-to-noise issue in the most skillful hindcast experiment. These results have potential implications for the signal-to-noise paradox in operational seasonal forecasting systems.