An intercomparison of skill and over/underconfidence of the wintertime North Atlantic Oscillation in EUROSIP seasonal forecasts

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Recent studies of individual seasonal forecast systems have shown that the wintertime North Atlantic Oscillation (NAO) can be skilfully forecast. However, it has also been suggested that these skilful forecasts tend to be underconfident, meaning that there is too much unpredictable noise in the model, resulting in a smaller ensemble mean variance than would be expected given the correlation between the ensemble mean and observations. This study aims to assess the skill and over/underconfidence of the seasonal forecast systems contributing to the EUROSIP (EUROpean Seasonal to Interannual Prediction) multi-model ensemble system. Five of the seven systems studied are found to have significant skill in forecasting the wintertime NAO at 2–4 month lead-times, but this skill is sensitive to the definition of the NAO used. Three of the systems are found to be underconfident for forecasting the NAO, while two systems are skilful but not underconfident. Despite variations in skill between models, certain years in the hindcast period are well forecast by all or most models, while others are poorly forecast by all models. This implies that common teleconnections and drivers of the NAO are being captured by the EUROSIP seasonal forecasts.