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Intermittency of seasonal forecast skill for the wintertime North Atlantic Oscillation and East Atlantic Pattern

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The wintertime North Atlantic Oscillation (NAO) and East Atlantic Pattern (EA) are the two leading modes of North Atlantic pressure variability and have a substantial impact on winter weather in Europe. The year-to-year contributions to multi-model seasonal forecast skill in the Copernicus C3S ensemble of seven prediction systems are assessed for the wintertime NAO and EA, and well-forecast and poorly-forecast years are identified. Years with high NAO predictability are associated with substantial tropical forcing, generally from the El Niño Southern Oscillation (ENSO), while poor forecasts of the NAO occur when ENSO forcing is weak. Well-forecast EA winters also generally occurred when there was substantial tropical forcing, although the relationship was less robust than for the NAO. These results support previous findings of the impacts of tropical forcing on the North Atlantic and show this is important from a multi-model seasonal forecasting perspective.