



## **Potential drivers of late autumn Barents-Kara sea ice concentration anomaly**

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Recent studies have shown that interannual variability of sea ice concentration (SIC) over the Barents-Kara (BK) seas in November is linked to winter atmospheric circulation anomalies that project on the North Atlantic Oscillation. Understanding the lead-lag processes involving the different components of the Arctic climate system from autumn to winter is therefore important. But what in turn can determine the BK SIC in November? Here we analyse sea-level pressure, sea ice drift velocity, surface turbulent heat flux, and oceanic heat transport. Thus a dynamical interpretation for the ice-ocean-atmosphere relationships that can affect the BK SIC anomaly in late autumn is given. It is found that a cyclonic (anticyclonic) wind anomaly over the Arctic in October, by Ekman drift, can be responsible for positive (negative) SIC in the BK seas in November. The results also suggest that ocean heat transport via the Barents Sea Opening in September and October can contribute to BK SIC anomaly in November.