

Abstract: The variability of winter (JFM) sea ice concentration (SIC) in the Barents Sea is investigated using SSMI/SSMR data and a regional 1/4° coupled sea ice-ocean model. The SIC displays two distinct modes of variability: the Northern mode describes the variations of the northern ice edge, whereas, the Eastern mode is associated with SIC variations west of Novaya Zemlya. Simultaneous and previous winter southward wind anomalies result in enhanced SIC in the northern Barents Sea. The Eastern mode is linked to westward wind anomalies. The heat transport through BSO in the previous fall covaries with the Northern mode but does not show significant correlation with the Eastern mode.

