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Title Monitoring the Atlantic Water inflow into the Arctic Ocean
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Theme

- -Theme 1: Design, Optimization and Implementation of the Observing System
- -Theme 5: Arctic Observations in the context of Global Observing initiatives

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Poster title (brief) Monitoring the Atlantic Water inflow into the Arctic Ocean

Abstract - text box
The Atlantic Water inflow represents the largest oceanic heat source for the Arctic Ocean. The majority of the Atlantic Water follows the shelf break west and north of the Svalbard archipelago as it enters the Arctic. Since 2012, a mooring array has been monitoring the inflow at 31 E, revealing large seasonal and interannual variability in the oceanic heat flux, which in some years significantly delays local sea ice formation in autumn and early winter. Analyses of hydrographic observations in combination with concurrent sea ice and atmospheric data show how in particular wind-driven vertical mixing and sea ice advection play a major role year-round for the presence of sea ice north of Svalbard. Since 2018, new moorings have been installed in the northern Barents Sea, where the fastest sea ice retreat Arctic-wide has been observed. The combination of the two programs will allow to investigate how the Atlantic Water entering the Barents Sea from the north affects the survival of the sea ice cover, and to better understand extent and variability of Atlantic Water modification.