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Influence of the Atlantic Subpolar Gyre on the Thermohaline Circulation

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During the last decade, record-high salinities have been observed in the Atlantic Inflow to the Nordic Seas and the Arctic Ocean, which feeds the North Atlantic thermohaline circulation (THC). This may counteract the observed long-term increase in freshwater supply to the area and tend to stabilize the North Atlantic THC. Here we show that the salinity of the Inflow is tightly linked to the dynamics of the North Atlantic subpolar gyre circulation. Therefore, when assessing the future of the North Atlantic THC, it is essential that the dynamics of the subpolar gyre and its influence on the salinity are taken into account.