



The Polar Front mean state and variability in the Barents Sea in a context of climate change : a satellite altimetry approach.

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The Barents Sea (BS) is a sub-arctic shallow continental shelf sea where drastic changes are currently happening. BS a key region to study present and future Arctic climate change. Indeed, BS is a pathway area where the warm and saline Atlantic Waters (AW) meet the colder and fresher Arctic Waters (ArW) and locally formed waters (BSW) are providing Intermediate Arctic water and participate in Arctic ventilation (e.g. Schauer et al. 2002). The Polar Front separating the AW and ArW water masses shows a large seasonal and interannual variability which is of importance for physical and biological processes (Loeng, 1991).

We study the Barents Sea Polar Front (BSPF) mean characteristics and variations during the 1993-2009 period using in-situ, satellite altimetry and model outputs. BSPF is a double front made of two branches delimitating a mixing area where BSW are formed. We show that this satellite altimetry product adapted for the Arctic (Prandi et al., 2013) is an appropriate tool for examining BSPF branches and their variations.