



## **On the seasonal variability of the eddy field in the eastern part of the Nordic Seas**

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The Norwegian Atlantic current (NwAC) transports warm and saline Atlantic water northward toward the Arctic Ocean, as a poleward eastern boundary current. The Atlantic water occupies a wider and deeper domain in the Lofoten Basin than farther south and north. It comprises the major-heat reservoir in the Norwegian Sea with contact with the atmosphere and is an important area for cooling. In the Nordic seas the Lofoten Basin is a region of high mesoscale activity. We infer that the fluid parcels are not going directly poleward, but are experiencing detours as in, for instance, horizontal recirculations. Such detours cause the fluid parcels to be in contact with the atmosphere for longer periods, increasing cooling.

In the POLEWARD project, SVP drifters have been deployed to track fluid parcels in the Norwegian Atlantic Current as it traverses the Nordic Seas. In the period June 2007 to October 2008, 118 ARGOS-tracked drifters, drogued at 15 meters depth, were deployed in the NwAC. We augment this data with historical data from SVP drifters in the same region. The interpolated and quality controlled position data have been used to construct maps of the mean velocity field at 15 m depth, the eddy kinetic energy and the principal axes of variance for summer and winter seasons. The drifters reveal strong, localized current systems along the Norwegian coast, the continental margins and their extensions to the Barents Sea and Spitsbergen. The eddy kinetic energy reveals stronger variability in the Lofoten Basin area, particularly in the wintertime. The variance axes show significant variations, both spatially and seasonally.