High-frequency dynamics near the shelf break southwest of Svalbard

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The high-frequency dynamics (including tidal and inertial currents, internal and coastal-trapped waves) on the shelf break/slope southwest of Svalbard were explored in September-October 2019 using a variety of mobile and fixed sensors operated as part of the NARVAL19 Sea Trial. Ocean currents, temperature and salinity were measured in the water column with 6 moorings, 3 gliders and a wirewalker profiler. In addition near-surface (15 m) currents were measured with 24 satellite-tracked drifters.

The collected data show some variability, mostly near the surface, associated with the lateral displacements or meandering of the Polar Front separating cool and low salinity waters on the shelf and warmer/saltier waters of Atlantic origin. The most striking signal, however, is at depth (in and below the thermocline) in the form of internal waves at semidiurnal tidal frequency.

Preliminary results of spectral and harmonic analyses of the data collected by all the platforms are presented and discussed.