



Sea-surface altimetry airborne observations using synoptic GNSS reflectometry at the Baltic Sea

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Recent GNSS-R (Global Navigation Satellite System-Reflections) observations over the Baltic Sea have been taken using the SPIR (Software PARIS Interferometric Receiver) from an airborne platform at 3 km altitude. This newly developed instrument is capable of acquiring GNSS signals transmitted by multiple satellites simultaneously that have been reflected of the sea-surface. Reflections are usually gathered in off-nadir configuration using the instrument's beam-forming capabilities, which results in an increase of the instrument's swath.

In this way, this technique opens the door to densify in space and time sea-altimetry observations to enhance future mesoscale and sub-mesoscale ocean altimetry.

The altimetric observations collected during the Baltic Sea campaign have been analysed in terms of their power spectral densities. We consider the sequence of observations as an ergodic process that has contributions from the actual true altimetry as well as the observation noise. In this way it is possible to relate the expected ground resolution of the observations with the obtainable altimetric uncertainty. Results will be presented.