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Poster
The AltiKa instrument was launched on the SARAL spacecraft 25 February 2013. Initial performance indicates that instrument noise is as good or lower than Jason-2 instrument noise. The water vapor radiometer calibration remains to be completed, and ECMWF moisture estimates are used for atmospheric correction in addition to the dry troposphere correction from surface pressure estmiates. With the Ka band altimeter, ionosphere influence is minimal. Orbit solutions in near real time show 10 cm amplitude errors at 1 cycle per orbital revolution. Data latency is very good with a large fraction of observations available within 24 hours of observation time.

The EM-bias correction has not yet been estimated, and a test of an automatically updating estimation algorithm has been applied to the initial data. In this algorithm, the EM-bias is initially set to 3.5% of the significant wave height. Observed sea surface height anomalies are binned as a function of significant wave height and wind speed with wind speed based on the algorithm from Abdalla, Scharroo and Lillibridge. The algorithm makes a daily estimate as new data arrives, and constructs a moving average with the prior estimate from yesterday. The weighting in the averaging results in a half amplitude in time of 30 days. The EM-bias development over the first 6 months of data indicates the instrument is quite stable and performing as expected. The EM-bias estimation algorithm for AltiKa is compared to the same algorithm applied to Jason-2 to understand the differences between performance at the Ku and Ka bands. The general shape of the corrections are similar with the Ka band showing smaller variation over significant wave height and wind speed and slightly more sensitivity to smaller surface waves as the Ka frequency of 35.75 GHz is more affected by surface gravity and capillary waves than the Ku 13.6 and 5.3 GHz on Jason-2.
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