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SARAL/AltiKa has been launched on February, 25th 2013, its first cycle has started on March 15th and the mission has been collecting high quality sea level data since then. This is the first time that a nadir looking conventional altimeter operates in the Ka-band, and differences were expected with respect to other altimetry missions that operate in the Ku-band (higher sensitivity to rain cells but also better performance in coastal areas). Differences were also expected over ice bodies where the Ka band should be less affected by penetration.
In this study we explore SARAL/AltiKa's behavior over the Arctic Ocean sea ice, with a focus on the backscatter coefficient. The first months of SARAL/AltiKa data are used to explore this year's Arctic melting season. Comparing SARAL/AlitKa to CryoSat-2 and Envisat shows that Ku and Ka-band backscatter over sea-ice present different behaviors, the Ka band seems to be much more sensitive to changes of the sea-ice surface which translates as a high variability of the backscatter coefficient. Possible explanations for the observed differences include: a different interaction with the sea or ice surface or effect of the smaller footprint of SARAL/AltiKa.
We present the first results of this exploratory work conducted under the CNES SALP contract, showing that the SARAL/ AltiKa mission might well provide new and useful information in the Arctic region over sea ice.
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