

EGU21-15639

<https://doi.org/10.5194/egusphere-egu21-15639>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



## Facilitating rain-on-snow detection with satellite data

**Annett Bartsch**

b.geos, Research and Development, Korneuburg, Austria ([annett.bartsch@bgeos.com](mailto:annett.bartsch@bgeos.com))

Rain-on-snow modifies snow properties and can lead to the formation of ice crusts which impact wildlife and also vegetation. Events in the Arctic have been recently linked to specific sea ice conditions (longer open water season) for Siberia. Specifically microwave satellite data have been shown applicable for identification of such events across the Arctic. Related snow structure changes can be observed specifically over Scandinavia, northern European Russia and Western Siberia as well as Alaska (Bartsch, 2010). Events which had severe impacts for reindeer herder herding have occurred several times in the last two decades.

Challenges further include the categorization of severity of events and attribution of observations to rain-on-snow events.

Calibration and validation of detection schemes have been largely based on indirect measures. Usually a combination of air temperature and snow height measurements, supported by reports of such events are analysed.

In this presentation, the utility of current calibration and validation approaches are discussed. Requirements towards in situ data from the viewpoint of satellite based retrievals are outlined.

Bartsch, A. Ten Years of SeaWinds on QuikSCAT for Snow Applications. *Remote Sens.* 2010, 2, 1142-1156.