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Comments by Florian Appel, VISTA GmbH. on behalf of the SnowSense team.Referee comment on "Review article: Performance assessment of electromagnetic wave- based field sensors for SWE monitoring " by Alain Royer et al., The Cryosphere Discuss., https://doi.org/10.5194/tc-2021-163-CC1, 2021

Comments from the reviewer in blue

Answer in black *Text added in black and italic*

Line 101 (table)

GNSSR ... Measures also Snow depth and Liquid Water Content maybe change to: Measures also Liquid Water Content and gives estimation of Snow Depth and Snow Density Done

20110

Line 106 (figure)

e) please remove lines from antenna 2 to antenna 1 and the snow surface to antenna 1, there is no interaction between the antennas. Antenna 1 is receiving GNSS signals directly (through atmosphere, antenna 2 is receiving GNSS signals through atmosphere and affected by traveling through the snow. the independent measurement at antenna 1 and antenna 2 are analysed for differences. Done

Line 351

... one placed under the snow and the other above the snow, both signals that are measured under dry-snow conditions can be compared and SWE derived (Fig. 1e) Maybe change to:

... one placed under the snow and the other above the snow, carrier phase measurements of both receivers can be compared and SWE derived onboard the measurement hardware (Fig. 1e)

Done

Lines 357f

This relatively recent and novel approach has been validated (Koch et al., 2019; Apple et al., 2020) and is now commercialized by VISTA Remote Sensing in Geosciences GmbH, Munich, Germany (SnowSense©, https://www.vista-geo.de/en/snowsense/).

maybe changed to:

This relatively recent and novel approach has been developed and validated (Koch et al., 2019; Henkel, et al. 2018, Appel et al., 2019) and is now commercialized by VISTA Remote Sensing in Geosciences GmbH, Munich, Germany (SnowSense©, www.snowsense.de).

Corrected. Reference to Appel added. Sorry for this omission

Line 773 (Acknowledgment) GNSSR installation was performed within ESA business development demonstration project SnowSense (<u>https://business.esa.int/projects/snowsense-dp</u>), if you want to inculde ESA in the text Added