Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2020-405-RC2, 2021

Atmospheric Measurement Techniques Discussions

Interactive comment on "Validation of wind measurements of two MST radars in northern Sweden and in Antarctica" *by* Evgenia Belova et al.

Anonymous Referee #2

Received and published: 5 January 2021

Validation of wind measurements of two MST radars in northern Sweden and in Antarctica

by

Evgenia Belova , Peter Voelger , Sheila Kirkwood, Susanna Hagelin , Magnus Lindskog , Heiner Körnich, Sourav Chatterjee , and Karathazhiyath Satheesan

The manuscript presents wind comparison of the MST radars ESRAD and MARA located at the Arctic and Antarctic in the framework of the Aeolos validation activities. Radar winds are obtained from the full correlation analysis. The authors present several comparison with various validation data sets e.g., radiosondes, reanalysis data

and NWP models. The results are in agreement with previous studies employing all types of MST radars including Doppler beam Swinging methods. The reviewer has some comments, which require some clarification.

Major comment:

The reviewer is a bit concerned about the use of reanalysis data for the comparison. As far as the reviewer is aware, ESRAD is part of the E-Profile network, and, thus the data is available for data assimilation into ECMWF and ERA data products. This needs to be somewhere mentioned in the paper. Although it is likely that only the radiosondes are included in the reanalysis, considering the bias of the radar winds. The reviewer recommends including a statement about a potential data assimilation in NWP.

The reviewer is a bit wondering about the scattering of the MARA winds compared to ERA5. In the paper it is mentioned that there were no radiosondes available for the Antarctic stations around MARA. In fact, what observational data enters ERA5 in the Antarctic, if radiosondes are not available? Can the authors provide a comment on that? Are the MARA winds assimilated?

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-405, 2020.