

Interactive comment on “Detecting the Melting Layer with a Micro Rain Radar Using a Neural Network Approach” by Maren Brast and Piet Markmann

Maren Brast and Piet Markmann

markmann@metek.de

Received and published: 17 December 2019

We agree that the method should be traceable and will publish the complete parameter sets for the neural network combined with some sample python code showing preparation of the data and post processing.

To the specific issues:

1. The melting layer was determined by the following criteria:

- The extent of the maximum in reflectivity was determined using first and the second derivative of reflectivity - The acceleration of precipitation was used - Width of sig-

C1

nal peak in spectrum shows strong gradients at the boundaries of the melting layer corresponding to quick changes in the attributes of precipitation - rain rate shows the strongest gradients at boundaries of the melting layer because the algorithm to retrieve rain rate in the micro rain radar misinterprets snow and melting particles very differently

We will extend our discussion of this in the manuscript.

2. It is indeed more probable that skewed rain streaks are responsible for not detecting the ML, though in some cases strong vertical winds distorting the ML might also be possible. We changed the explanation.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-248, 2019.

C2