Atmospheric Measurement Techniques Discussions

Atmos. Meas. Tech. Discuss., author comment AC1
https://doi.org/10.5194/amt-2021-219-AC1, 2021

Reply on RC1

Alessandro Battaglia

Author comment on "Impact of second-trip echoes for space-borne high-pulse-repetition-frequency nadir-looking W-band cloud radars" by Alessandro Battaglia, Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-219-AC1, 2021

Thanks for the suggestions.

Concerning the comment "could you elaborate on how you think the mirror echoes add any information" here we have simulated mirror image to the ``best of our knowledge''. A correct simulation of mirror images require a correct estimate of sigma_0 and of the attenuation between the mirror and the ground. As a result checking that measured mirror images reflectivities are properly simulated is an indirect check on sigma_0 and PIA estimates. In principle in (light) rain mirror echoes could be used to cross check whether the attenuation correction algorithm is producing a realistic attenuation profile .