Response to the review of "Should radar precipitation depend on incident air temperature? A new estimation algorithm for cold climates."

SC1: Response to M.Gabella

The authors wish to thank the reviewer for his constructive comments to the discussion paper. In the following, we have responded to the comments from the reviewer. The short comment from the reviewer (SC) is in italic font while the author comment (AC) is in blue normal font.

p4, l28-29: The authors cite Saltikoff et al. (2000) stating that real-time change from Z-R to Z-S does not improve QPE. However, they should also mention Fig. 5 page 675, Saltikoff et al. (2015). There, by comparing Picture a) with Picture C) it seems clear that switching from Z-R to Z-S at the beginning of the winter season is better than keeping a fixed Z-R.
REFERENCE Saltikoff et al. (2015) BOREAL ENV. RES. Vol. 20 ISSN 1797-2469 (online)

AC: We agree with the reviewer that Z-S equation ($Z_e=100S^2$) better estimates quantitative precipitation estimate of snowfall at the beginning of the winter season than using Z-R ($Z=200R^{1.6}$) as reported by Saltikoff et al. (2015).
This information will be incorporated and the text will be updated.

References

Saltikoff, E., Lopez, P., Taskinen, A. & Pulkkinen, S. 2015. Comparison of quantitative snowfall estimates from weather radar, rain gauges and a numerical weather prediction model. *Boreal Env. Res,* 20**,** 667-678.