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Discussions

Interactive comment on "A microwave satellite water vapour column retrieval for polar winter conditions" *by* C. Perro et al.

Anonymous Referee #1

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This article describes an updated retrieval method to obtain water vapour columns in polar regions from the MHS and AMSU-B instruments. The improvements to current methods are described and the new method tested against synthetic and real data. The new method involves using a-priori information and iterating a radiative transfer model to optimise the optical depth profile by scaling the water vapour profile. The results are interesting and probably should be published I do however have some concerns.

My major question is why they do not just do a formal retrieval using an optimal estimation or other method. Secondly, no indication of the relative computational burdens for the methods compared was given. I assume that this is important when processing images and presumably the reason that such parameterise methods have been developed. A third concern is that really only the case3 results and the comparisons to real

data are a good test of the method. Since the same RT code is used to make the data as is then used in the analysis in case 1 no real conclusion can be drawn. In case 2 only random noise but no systematic effects have been applied so again the cards are weighted.

Otherwise the paper is well written the figures are clear and instructive.

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