

Interactive comment on “Aerosols indirectly warm the Arctic” by T. Mauritsen et al.

T. Mauritsen et al.

thorsten.mauritsen@zmaw.de

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Thank you for your positive assessment of our manuscript. We would like to point out that we are not the first to suggest that aerosol effects may act in the longwave radiation. However, previous studies have focused on the first aerosol indirect effect (radius effect), while we find that the second aerosol indirect effect is far more efficient at these very low CCN concentrations.

We had two CCN counters onboard. One instrument was setup to monitor at 0.2 % supersaturation, the other was scanning various values including 0.7 %. Most of the time the difference between counts at 0.2 and 0.7 % was less than an order of magnitude. Note here that Figure 2 is semi-logarithmic. There was a case, as explained in the text, when the difference was larger and that is marked by blue dots in Figure 2. Assuming a higher supersaturation for this period would shift the data points to the right, closer

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to the model curves. There is also a discussion of this topic on page 16781. See also reply to Referee 1.

Based on your recommendation, and discussions with others, we have decided to change the title. We have also added a couple of sentences to the discussion in sections 3.2 and 4.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 16775, 2010.

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