

***Interactive comment on* “Technical Note: Analytical formulae for the critical supersaturations and droplet diameters of CCN containing insoluble material” by H. Kokkola et al.**

H. Kokkola et al.

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We thank Mr. Abdul-Razzak for his comment on the manuscript. Here is our reply to the points made in the Short Comment.

However, since the size of the insoluble core is negligible compared to the size of the activated droplet, the value of these equations is limited.

The dry material in a cloud droplet is always much smaller compared to the size of the activated droplet, be it soluble or insoluble matter. But if you replace enough of the soluble matter by insoluble material, the critical supersaturation will increase significantly.

This may not be relevant in most atmospheric conditions in global scale, but close to the

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sources of, for example black carbon, the fraction of insoluble material in dry particles can be significant.

Technical Corrections: The authors should remove "exp" from Equation 1.

Including exp in the Equation 1 will give a more accurate result than omitting it, so we would prefer not to change the equation.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 17967, 2007.

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