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Interactive comment on "Technical Note: The horizontal scale-dependence of the cloud overlap parameter alpha" *by* I. Astin and L. Di Girolamo

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I would like to thank the reviewer for their comments and noting that this 'discusses a potentially important problem for cloud modeling' and that 'the problem is nicely illustrated'. I attach our full response to the reviewer in the attached pdf.

The 'Major Comments' all relate to making the mathematics clearer by putting in additional steps (these are given in the attached pdf) and will be included in any revised manuscript.

For clarity, the mathematics relies on three assumptions:

(1) The overlap parameters depends only on scale and the two heights a and b. (2)

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The mean and variance in cloud cover fraction is the same at both heights a and b.(3) The mean and variance in cloud cover fraction is also the same in both grid boxes j and j+1.

The 'Minor Comments' are typographical and will be corrected in any revised manuscript.

Please also note the supplement to this comment:
http://www.atmos-chem-phys-discuss.net/14/C4557/2014/acpd-14-C4557-2014-supplement.pdf

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 9801, 2014.