

***Interactive comment on* “Relationship between drizzle rate, liquid water path and droplet concentration at the scale of a stratocumulus cloud system” by O. Geoffroy et al.**

O. Geoffroy et al.

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We thank R. McGraw for his relevant comments about our article and his nice summary of our results.

We fully agree with him that drizzle, and more generally microphysics parameterizations should be developed for scales larger than the LES so that tuning will no longer be necessary (justified). Significant efforts are dedicated to the statistical approach that is clearly synthesized by R. McGraw. One can also mention a second type of parameterization, the so-called super parameterization concept, introduced by W. Grabowski, in which the jpdfs are explicitly calculated, though on a reduced dimensionality (2D grid in a 3D framework).

In this paper, we are following a third approach, more empirical, to show that the relationship between LWP, CDNC and the precipitation rate that was identified in three different data sets, is also corroborated by LES simulations. The LES simulations do not help analyzing the rationale behind such a relationship and they show that it should not be extended to smaller scales since it represents an average over various convective cells at diverse stages of growth. It is however useful because it is robust, it has no threshold to tune, and it covers a large range of the input parameter values.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 3921, 2008.

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