We thank reviewer 2 for the helpful comments which helped us to improve the manuscript.

I support publication. The manuscript is quite well written as it is. There are a few relatively minor points that the authors may wish to consider that I have raised below, but, overall, the manuscript is in good shape.
It seems the question as to why cloud droplet spectra are “broad” has been plaguing the cloud physics community since we were first able to compare measured droplet distributions with calculations of adiabatic growth. There are many competing hypotheses as to why this discrepancy exists, which the authors have referenced in their introduction. In my opinion, one reason that we may have been puzzled about this for so long is that there’s no single reason for this spectral broadening, and in most cases, it is probably a combination of factors. Radiative effects certainly play some role, and this paper shows some of the effects for shallow cumulus clouds.
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pg. 1, last line: “Smaller droplet sizes reflect more radiation back to space...” Clarify please. Perhaps just add that this is true if the liquid water is held constant.

Thank you! We added: "for constant liquid water".

References to Pruppacher and Klett: This is a 700 page book. At least reference the chapter for the point you are trying to make.

Chapter 14, pages 569-616, is added to the citation.

Pg. 2; line 1: “...larger droplets allow radiation to settle more easily...” Settle implies that gravity is the driving force. I think that you mean that radiation penetrates to the surface more easily when the droplets are larger.

Thank you for pointing this out. We changed "settle" to "penetrate".

Pg. 3, line 5: You reference high local cooling rates for cumulus clouds in the context of the finite size. It would be useful to provide a value for typical cooling rates for stratus clouds at cloud top.

A comparison to stratus clouds in this context is difficult. Heating rates depend amongst other things on the temperature profile, liquid water content or, as they are volume quantities also on the grid box size of a simulation. But we see your point that some clarification for 1D and 3D radiative transfer cases is necessary. The already cited literature (and a new publication) compare heating rates in 3D and 1D in the same cloud fields based on the same background atmosphere and resolution.
We added: "Klinger and Mayer (2016, their Figure 11) showed that local peak differences in cooling rates between 1D and 3D thermal radiation in cumulus cloud fields can reach 20-120%, depending on the cloud field resolution. But the differences between 1D and 3D thermal radiation are not only focused on local grid boxes. Kablick et al. (2011) and Crnivec and Mayer (2019) showed that layer averaged 1D and 3D heating and cooling differences can be up to 1’K/d, which is the same order of magnitude as clear sky cooling."

Pg. 6, line 15: Check the parentheses on the reference to Harrington.

Checked.

Pg. 7, line 6: The first two sentences are redundant. One or the other is fine.

Corrected.

Pg. 12, line 12: Two consecutive occurrences of "the".

Corrected.

Pg. 18, line 24: Two consecutive occurrences of "stronger".

Corrected.

Pg. 17 (last line) continuing to first lines of pg. 18: In the discussion of Figure 14, the statement is made that the rain water path shows an increase an hour after restart for the 3DD 3DM case. Is that a significant difference? I can see that the line is slightly higher than the other three, but the difference disappears after time 6.5. In the text, that's attributed to noise, but then why isn't the initial increase just noise as well?

We agree that the word "noise" is misleading and have reworded the text accordingly.