Dear Pr. van den Heever,

We thank you for these 3 remarks and answered to each of them.

(1) Reviewer 3 asks the following related to Figure 8 and the associated text: “Please mention some previous studies that have shown any relationship between the “integrated flux” and the “LLC breakup time”. I assume that you did not include any references as you decided to use the averaged flux rather than the integrated flux. However, even when using the averaged flux I think that it would be useful to mention previous studies demonstrating this relationship.

We do not know any reference which shows a relationship between surface flux and LLSC breakup time; we should have mentioned this in the response to reviewer 3. If you know any, please let us know. However the relationship shown in Figure 8 seems to be reasonable as the stratus has a strong impact on the net radiation as already shown by Hartmann or Chen. In order to include this idea we added two sentences; the modified paragraphs are below with the new sentences in bold blue.

*“**The stratus clouds modify the surface energy balance (SEB) because they reduce the net shortwave radiation twice as much as they increase the net infrared radiation (Chen et al., 2000).** In order to investigate the effect of the LLSC on the SEB during DACCIWA campaign, the temporally averaged flux from 0600 UTC to 1600 UTC (indicated by < >) of the net radiation (Rn), the latent heat flux (Le), and the sensible heat flux (H) are calculated for 21 days for Savè and Kumasi and 20 days for Ile-Ife.*

*Figure 8 shows a negative correlation between <Rn>, <LE>, and <H> and the stratus breakup time, with correlation coefficients below -0.64 for Savè and Kumasi. The variability is certainly due to the day-to-day variation of soil moisture which is more important at the beginning of the campaign than at the end, when frequent rain events maintained an almost constant soil moisture. <Rn> is reduced by 25% and 50% when LLSC breakup occurs after 1300 UTC at Savè and at Kumasi, respectively. This difference may be due to LLSC macrophysical properties, like deeper clouds or larger liquid water path, but also to higher cloudy layers which also impact the net radiation. Unfortunately, the same plot cannot be provided for Ile-Ife where the breakup time of the stratus could not be determined. **From these results, one can deduce for the first time the error related to the SEB if the LLSC breakup time is inaccurately simulated by numerical models**.”*

(2) “Latter stratus breakup implies lower net radiation at surface (Fig. 8)” needs to be replaced with “Later stratus breakup …. at the surface (Fig. 8)” (not both “Later” and “the surface”).

We apologize for these two mistakes in the same sentence. The sentence is now: “Later stratus breakup implies lower net radiation at the surface.”

(3) There are still a number of grammatical errors throughout the manuscript. Please will you work through the manuscript and try to eliminate as many of these as possible.

We corrected as many grammatical errors as possible.

In addition to these improvements, below is the list of the main modifications we did in the text:

1/ we removed the reference to Bessardon et al., since this article is not ready for publication yet.

2/ we replaced some “stratus” by “LLSC” in the text, including in some section or subsection titles, to be consistent. Example: “From LLSC onset to breakup” instead of “From stratus onset to breakup”.

3/ A last sentence has been added to the following paragraph (in the conclusion) to better link it to the present study: “*A factor also to consider in the study of LLSC diurnal cycle is the aerosol effect in the context of rapid and significant socioeconomic changes that are happening in southern West Africa (Knippertz et al., 2011). Deetz et al. (2018) performed highly resolved process study simulations for 2–3 July 2016 with COSMO-ART to assess the aerosol direct and indirect effect on meteorological conditions over southern West Africa. They find that MI and stratus-to-cumulus transition are highly susceptible to the aerosol direct effect, leading to a spatial shift of the MI front and a temporal shift of the stratus-to-cumulus transition with changes in the aerosol amount. However, aircraft measurements of aerosols and clouds over southern West Africa during the 2016 summer monsoon show pollution and polluted clouds across the whole region (Taylor et al., (2019), Haslett et al. (2019)).* ***The aerosol effect on LLSC diurnal cycle could not be investigated with ground-based measurements performed during DACCIWA campaign.”***