The authors would like to thank the reviewer for his/her valuable comments which helped improving the quality of the manuscript. Our point-by-point responses to the reviewer's comments appear in bold below.

Reviewer 2

General comments

The overall quality of the preprint is very good showing a well written manuscript. However, some technical corrections must be performed before publication.

Specific comments

No specific comments are raised when reviewing this manuscript.

Technical corrections
Page 1
L23. Replace "sensing" by "sensing techniques'
A correction has been done.
"…with the help of sidewards staring remote sensing instruments (lidar and radar)."

L25. Replace «made it » by « made »
The correction has been done.
"The measurements made possible to characterize the size distribution…"

Page 2
L14. Add more recent references (2019-2020)
The role of trade-cumuli in the uncertainty in model estimates climate sensitivity has been shown for the first time in 2005, but many papers have confirmed this result subsequently (Brient et al., 2016; Vial et al., 2017). More recent studies show that the uncertainty in model estimates of climate sensitivity still arises from the response of low-level clouds to warming (e.g. Zelinka et al., 2020), not only in the tropics but also in the extratropics, but no study to date has analyzed the relative roles of shallow cumuli vs stratocumuli in the uncertainty of low-cloud feedbacks. It is also worth noting that the models that predict a significant decrease of shallow cumuli with warming predict a higher climate sensitivity than the models that predict weak or no change.

"In climate models, the differing responses of these clouds to global warming has been identified as one of the leading causes of uncertainty in climate sensitivity (Bony and Dufresne, 2005; Medeiros et al., 2015; Webb et al., 2006)…"

has been replaced by:

"In climate models, the differing responses of these clouds to global warming has been identified as one of the leading causes of uncertainty in climate sensitivity (Bony and Dufresne, 2005; Brient et al., 2016; Medeiros et al., 2015; Vial et al., 2017)."

Added references are:

Brient, F., T. Schneider, Z. Tan, S. Bony, X. Qu and A. Hall, 2016: Shallowness of tropical low clouds as a predictor of climate models' response to warming. Clim. Dyn., 47 (1-2), 433-449, doi:10.1007/s00382-015-2846-0

Vial, J., S. Bony, B. Stevens and R. Vogel, 2017: Mechanisms and model diversity of trade-wind shallow cumulus cloud feedbacks: A review. Surveys of Geophysics, 38 (6), 1331-1353, doi:10.1007/s10712-017-9418-2

Page 3
L1. Replace « much better » by « very efficiently »
The correction has been done.
"In contrast, lidars have the potential to detect them very efficiently…"

L11. Omit « Both »
The correction has been done.
"To increase the areal sampling of the cloud field and to observe the cloud distribution at cloud-base…"

Page 4
L8. Define « LSCE »
It has been defined.
"Developed at LSCE (Laboratoire des Sciences du Climat et de l'Environnement)…"

Page 5
L12. Replace « (and » by « and »
The correction has been done.
" …pressure difference and a wave front error…"

L13. Replace « Flatness « by « The window Flatness »
The correction has been done.
"The window flatness was specified…"

Page 6
L23. The « prototypical flight » could be « flight strategy
The correction has been done.
" The flight strategy …"

Page 8
L8. Replace « boundary layer « by « Planetary boundary layer »
The correction has been done.
"…the lower part of the planetary boundary layer."

Page 10
L6. Replace « begining » with « starting »
The correction has been done.
"Figure 4. Lidar data processing diagram starting from raw data…"

L13. Replace "native" by "raw"
The correction has been done.
"The raw sampling…"

L15. Omit “it”
The correction has been done.
"This offset makes possible…"

Page 17
L5. Replace “nadir” by “nadir”
The correction has been done.
"…considered for lidar measurements at Nadir…"
has been replaced by:
"…considered for lidar measurements at nadir…"

Page 18
L1. Replace “consid, Fered » by “considered »
The correction has been done.
"Two additional parameters are considered for…"

Page 29
L5. Replace « further » by « forthcoming »
The correction has been done.
"… as the forthcoming Earth Clouds…"

Figures 3, 5, 6, 12:
Provide these figures with much higher resolution.

The figures will be in 300 dpi.