

Interactive comment on “An overview of the diurnal cycle of the atmospheric boundary layer during the West African monsoon season: Results from the 2016 observational campaign” by Norbert Kalthoff et al.

Anonymous Referee #1

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This paper describes initial analysis of ground-based measurements from a major field campaign in West Africa. In particular the paper focuses on measurements for characterising the occurrence of low-level clouds and the meteorological conditions in which they develop. The measurement systems and their geographical spread really help to fill a gap in our observational knowledge of this region and I'm sure will be of great value for many years to come. This paper provides a very well-written introduction to the dataset and the conditions over the course of the campaign. Aside from some minor grammatical suggestions, and taking into account the comment raised by Matthias

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Wiegner on the use of different ceilometers, I consider this paper publishable with only very minor technical corrections in ACP. This paper (and the associated field campaign) is an extremely welcome addition to the body of knowledge on West African meteorology.

Suggested edits (to improve readability):

Page 2

L8 “high-quality observational data in this region have been lacking”

L 11 “latent heat release, and. . .”

L21 “occurs frequently”

L22 “unclear what role. . . play in nocturnal. . .”?

L26 “These previous studies”?

L40 “in the lowest kilometres. . .”

Page 3

L23 “to those which. . .”

L24 “are available from at least two of the supersites”

L:34 “for the Kumasi site. . .”

Page 4

L7 “stratification, and to obtain”

L9 “lowest cloud layer which fulfils. . .”

Page 5

L3 “with height above the ground”

C2

L6 “. . . investigated in Section 4.”

L36 “long-lived MCS”

L39 “during the monsoon onset phase”?

Page 8

“(to approximately . . . , and 80%...”

L22 “considerable variability from day to day with respect. . .”?

L40 “associated with large interquartile. . .”

Page 9

L27 “Banta et al., 2006), and. . .”

L33 “To seek an explanation. . .”

Page 10

L23 There is a missing verb here

L27 “stratified, being. . .”

L31 “every night, reaching maximum strength between. . .”

Page 11

L5 “breaking up to form convective. . .”

Table 1 caption: “height in meters”

Figure 2 The arrows in the right-hand plots could be thicker

Figure 2 caption “(red dots) plus or minus their. . .”

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-631>, 2017.