

Interactive comment on “Concentration, temporal variation and sources of black carbon in the Mount Everest region retrieved by real-time observation and simulation” by Xintong Chen et al.

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We greatly appreciate the reviewers' valuable and constructive suggestions concerning our manuscript (ID: acp-2018-183). The point-by-point reply to the comments are as follow:

Response to Referee's Comments #3

This paper is talking about mass concentrations, temporal variations and source regions along with transported mechanisms of airborne BC observed in Mountain Everest region. The authors have revised this paper followed by the reviewer's comments. I

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suggest that this paper can be published to ACP and some minor comments are listed as:

1. Line 16, change "...in the non-monsoon season" to "...during the monsoon season".

Author response: In the new revision, we have rewritten this sentence to make the explanation more clearly in Lines 14-17.

2. Line 78-79. What is the time resolution for measurements in meteorological parameters? The authors should state.

Author response: The meteorological parameters at QOMS were measured by an automatic weather station at QOMS with 10 min time intervals. We have added this statement in Line 81.

3. Line 129-133. The authors should cite papers for utilizations of HYSPLIT model.

Author response: Stein et al. (2015) presented the HYSPLIT model developments and applications, and we have cited it in Lines 154-155. Moreover, Xu et al. (2014) used the HYSPLIT model to calculate the backward trajectories of the air masses at QOMS. Our selection of parameters in the HYSPLIT model was according to Xu et al. (2014)'s study, and we have cited it in Lines 157-158.

4. Line 141. Please replace "...at QOMS (Fig. 3c) (Cong et al., 2015a)" by "...at QOMS from August 2009 to July 2010 (Fig. 3c) (Cong et al., 2015a)".

Author response: We have replaced the sentence "...at QOMS (Fig. 3c) (Cong et al., 2015a)" by "...at QOMS from August 2009 to July 2010 (Fig. 2c) (Cong et al., 2015a)" in Line 169. And we have also added the research period of other two comparison sites, including the EC at NCO-P station from March 2006 to February 2008 and the EC at Nam Co station from January to December during 2012 in Line 168 and 174, respectively.

5. Line 161. I think the decreased BC during the monsoon is due to washout by

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precipitation. So, please remove humidity in the sentence of “. . .increasing humidity and. . .”

Author response: We have removed humidity in the sentence of “. . .increasing humidity and precipitation . . .” in Line 190.

6. Fig. 11. It is better to point out the location of QOMS in all panels of this figure for the reader to follow it.

Author response: Thanks for the reviewer’s advice. We have marked the location of QOMS in all panels of Figure 10. Because we have moved a figure into supplement materials, the Figure 11 in the original manuscript was changed to Figure 10 in the new revision.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2018-183/acp-2018-183-AC3-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-183>, 2018.

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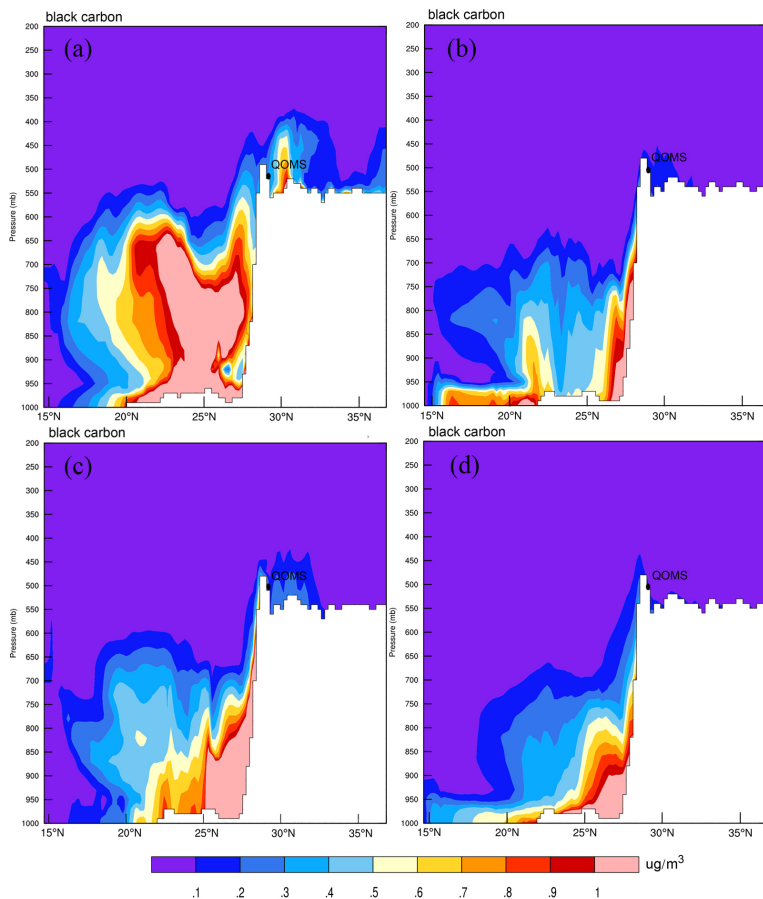


Fig. 1. Vertical profiles of mean BC concentration along the QOMS's longitude of 86.95°E : (a) event A; (b) event B; (c) event C; (d) event D.

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