

## ***Interactive comment on “Temporal consistency of lidar observables during aerosol transport events in the framework of the ChArMEx/ADRIMED campaign at Menorca Island in June 2013” by P. Chazette et al.***

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Reviewer 1 In all paper the authors should abandon the use of BER, and adopt ONLY the LR values, as done in all other papers published from non-French groups. As we wrote in response to the prior review, in the article we consider BER rather than the lidar ratio (LR) which is the inverse of BER because it is directly proportional to both the single scattering albedo and the probability to backscatter a photon. The use of BER is not a scientific error. Moreover, the values of the corresponding lidar ratio (LR) are indicated in parentheses for several cases, as in the abstract.

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This section is too long, and repeats same text as in the cited papers. Please shorten without repetitions. Yes, we agree. The text has been shortened in the interest of clarity.

It is better to use "linear particle" instead of "particulate" Yes, the correction has been done.

The accuracy of the Microtops II retrievals has to be mentioned We have added the accuracy of the Microtops II.

Replace "families" by "types" The correction has been done.

As these values are not unique for the aerosol types considered, I would like to see the standard deviation (STD) values reported from other papers (to be cited). For instance the marine type lidar ratio (LR) may vary from ... to .... and the LPDR values from 0 to .. %. Ranges of values previously published in the literature have been added with the references. The corresponding section has been highlighted in yellow in the modified manuscript hereafter.

Please use 1 word: nighttime The correction has been done.

Please cite relevant papers (e.g. detection of BB over Europe) Previous papers have been cited: Fiebig et al. (2003), Müller et al. (2005), Groß et al. (2011), Nisantzi et al. (2014). The corresponding section has been highlighted in green in the modified manuscript hereafter.

I find the Fig, 8b, full of very large discrepancies; thus no real information can be extracted. It should be omitted (but discussed in the manuscript). We have a different opinion: it is also very important to show the data when a bad agreement is highlighted, especially when the measurements are largely used in the field with no precaution. We thus kept Fig. 8b as is.

Discuss how this compares with previous similar measurements. As explained, a full explanation is given in the companion paper of Ancellet et al. (2016) accepted in

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this issue. The corresponding section has been highlighted in pink in the modified manuscript hereafter.

Be careful here> Over Cyprus the dust LR is lower than that from Saharan. This should be mentioned and clarified here. This point has been clarified in the text and another comparison has been added with this reference. The corresponding section has been highlighted in blue in the modified manuscript hereafter.

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/15/C12438/2016/acpd-15-C12438-2016-supplement.pdf>

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 32723, 2015.

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