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Comment

## ***Interactive comment on “Aerosol properties over the western Mediterranean Basin: temporal and spatial variability” by H. Lyamani et al.***

**Anonymous Referee #2**

Received and published: 16 September 2014

Aerosol properties over the western Mediterranean Basin: temporal and spatial variability by H. Lyamani et al.

General comments The main objective of this manuscript is the analysis of AERONET sun photometer data collected at a small island in the western Mediterranean; the analysis is further extended to comparisons with other adjacent stations and with ship borne data from the Maritime Aerosol Network, and a final section includes an approach to the "Evaluation of the impacts of the European ship emission regulations on the atmospheric columnar aerosol properties"

I have to say that I agree with the main comments made by Referee #1 which should be carefully taken into account by the authors. Therefore I just include a set of more

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specific comments to be addressed by the authors. After the appropriate revisions requested, in my opinion this manuscript will be apt for being published on ACP.

Specific comments P 21524 - L 2 – Just to say that the acronym “AERONET” is never defined in the manuscript P 21524 - L 6 – The aerosol load over... P 21524 - L 18/19 – shows that no significant changes in columnar aerosol loads were observed at this site, since the European Directive on ship emissions was implemented in 2010. P 21525 - L 7 – ...the most accurate one for the retrieval... P 21525 - L 10 – However, the quantification... P 21525 - L 23 – ...lacks of continuous... P 21526 - L 25 – I would include a comma after “(ROA)”. P 21526 - L 26 – substitute “;” by a comma. P 21528 - L 3 – hinted from size distributions. P 21528 - L 5 – I would remove “investigate”. P 21529 - L 5 – low pressure systems. P 21529 - L 20 – Use Å. P 21529 - L 21 – Use Å. P 21529 - L 22 – Use Å. P 21530 - L 4 – ...and island sites, respectively, and have... P 21530 - L 14 – “ship borne” instead of “ship”? P 21530 - L 28 – The authors stated that CDC1 Meteorological data was used, but in figures 3 and 4 GDAS was used instead. P 21531 - L 18 – larger wavelengths. P 21536 - L 6/7 – Remove “On other hand,”

P 21532 - L 9 – “. . .open oceanic areas not affected by long-range aerosol transport” –this gives the impression to the reader that these regions are never affected by long-range aerosol transport, which, I believe, is not always true. P 21532 - L 21 – I suggest to displace the parenthesis to the end of the sentence. P 21539 - L 21 – Where is Fig 7c?. Please correct. Besides, if we look to figure 7 one can find “(a)” in the upper but no “(b)” can be found. The authors may either remove one or include the other. P 21540 - L 1 – was associated. P 21540 - L 11 – consider changing “fell” to “decreased” or “diminished”. Small issue. P 21541 - L 14 – Use Å P 21541 - L 20 – over these areas, while Alborán Island. P 21541 - L 21 – “This can explain” or “This explains”. P 21543 - L 13/14 – A suggestion: “and three adjacent sites in the western Mediterranean”. P 21543 - L 20 – “for the entire period” can be removed. P 21544 - L 9/10 – was comparable to the observations over the... P 21544 - L 12 – A northward decrease in... P 21544 - L 17 – A suggestion: “. . .showed large variability and no evident pattern

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was discernible/found.”

• The spelling of "Ångström" is always incorrect. Please revise that. • Maybe figure 6 should include information about the other stations besides Málaga. • In figure 2, both the legend and the "(a)" are not so well placed. • Caption of figure 2 – "Å" instead of "A". • Figure 3 caption – correct "Angstrom". • Figure 4 caption – correct "Angstrom".

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Interactive comment on Atmos. Chem. Phys. Discuss., 14, 21523, 2014.

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