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Interactive comment on "Brief communication: Organochlorine pesticides in an archived firn core from Law Dome, East Antarctica" *by* M. Bigot et al.

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Response to comments from Reviewer 3

The authors would like to thank the anonymous reviewer for their thoughtful comments and suggestions.

- Thank you for your suggestions regarding information on site-specific characteristics. They have been added to the revised manuscript as previously addressed in our response to Reviewer 1.

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- We have added a map (see new Figure 1) which gives a better idea of the geographical location of Law Dome for readers who are not familiar with the region.

- Further information on handling/storage contamination was added in the revised manuscript in our response to reviewer 1. As requested, we added drilling information on p3, lines 8-9 “The sections of the core used in this work were extracted using thermal drilling (Morgan et al., 1997).”

- Reviewer wrote: "The relationship between Arctic and Antarctic pollutants concentration amount may be taken into consideration, but cannot become the key to any conclusions."

We agree with the reviewer, and it was our aim when writing this manuscript and its conclusions.

- Reviewer wrote "While it may be true that no earlier firn core studies are available to use as a guide for sample volume needed from Antarctica for OCPs, I think the volume used is really too big, a tenth could be enough for a more defined (in time) measurement."

Selection of our target volume was based on multiple factors including our method detection limits, previous concentrations found in other Antarctic matrices and volumes used in previous studies. Some previous Antarctic studies had used from 500 mL in surface snow (for HCB and HCHs, Kang et al. 2012) up to 132L of sea-ice (for a slightly wider range of OCPs, Dickhut et al. 2005). We could have used lower volumes to detect HCHs, but we were aiming at a wider range of OCPs.

The following has however been added in the revised manuscript: p7, lines 11-12 “HCHs and dieldrin were found at the largest concentrations suggesting that they could be targeted in future Antarctic glacial ice investigations to obtain more refined measurements using much lower volumes.”

- C.E. is now defined.

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Please find revised manuscript in attachment.

Please also note the supplement to this comment:
http://www.the-cryosphere-discuss.net/tc-2016-178/tc-2016-178-AC3-supplement.pdf

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