

Interactive comment on “Long-term monitoring of persistent organic pollutants (POPs) at the Norwegian Troll station in Dronning Maud Land, Antarctica” by R. Kallenborn et al.

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Very good and interesting paper on organochlorines in air of Antarctica. Unlike the Arctic, Antarctica lacks a regular air monitoring program and so it is timely and relevant to have these recent measurements. I have only a few comments.

Page 6229, section 10. Re: higher concentrations of HCB in winter. What is the possibility that lower levels in summer were due to breakthrough on the PUF cartridge used for sampling? What were summer and winter temperatures? Two PUFs were used for sampling and sample volumes of 2200-2500 m³, so it is quite likely that breakthrough occurred during warmer periods. Were front and back PUFs analysed to check for

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breakthrough?

Page 6230, section 10. “Thus, a ratio between 1 and 3 (p,p'-DDT/o,p'-DDT) indicates fresh, not weathered technical DDT as potential source”. I don't see how the ratio of p,p'-DDT/o,p'-DDT can be an indication of “freshness”. The ratio of DDTs to metabolites DDE and DDE would indicate this, but mostly the p,p'-DDT/o,p'-DDT ratio has been interpreted to infer technical DDT vs. dicofol DDT contributions. This is mentioned by the authors, and they should quote the proportions of p,p'-DDT/o,p'-DDT in dicofol vs. technical DDT (Qiu et al., ES&T 2005). Just above is the sentence “The ratio between the major constituent p,p'-DDT and o,p'-DDT (the major byproduct) is about 3–5” (referring to the composition of technical DDT). This is correct for technical DDT, but not for its vapour, because o,p'-DDT is more volatile. This section needs to be re-evaluated.

Page 6233. Historical Data. There have been many more air sampling studies in Antarctica and the Southern Ocean, going back to the 1980s (Iwata et al., ES&T 1993 and papers cited therein). However, Antarctica is also a big place and it is not clear to me which historical data have relevance to the present geographic location. A brief discussion of main air transport pathways to the various parts of Antarctica would help put this into perspective. For example, can earlier measurements in the Ross Sea be compared with recent measurements here? Also, Table 2 uses superscript numbers to identify references, but the reference list has no numbers, the authors are in alphabetical order.

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