

We appreciate the reviewer's comments and suggestions. Most of them will be taken up in the revised manuscript. To facilitate the review process, we include our answers in red under the comments of the reviewer.

P22851 L15: Please add the year when the PBDEs were added to the Stockholm Convention. The citation suggests that it was in 2013 when this is not the case. You could also specify the technical mixtures, as you have done for the other regulations. **Penta and octaBDEs were included in the list of the Stockholm Convention in 2009, this information has been added. In the original text of the manuscript the citation with the 2013 date was referring to the date in which we accessed the web page of the Stockholm Convention.**

P22849 L5-6 and P22852 L 11-14: It might be useful to add in the text the countries where the sampling sites are located. **Done**

P22852 L24: Which type of deposition sampler was used? **No commercial stainless steel or Teflon coated samplers were used, all them were lab-made. We have added the information on these devices in the new version.**

P22852 L26 and P22853 L8: First it is written 45 mm for the filter diameter, the second time 47 mm. Is this correct? **Yes, 45 mm is the diameter of glass fiber filters, whereas 47 mm is the diameter of C18 Empore disks.**

P22852 L17-19: Why did you use PCB recovery standards and not mass-labeled PBDE recovery standards? **We began the analysis of the deposition samples in 2004 following the method described in the manuscript. Meanwhile, we optimized a new method that used <sup>13</sup>C standards and took into account possible BDE 209 degradation in the injection system during the chromatographic analysis (see reference Vizcaino et al. 2009). Some aspects of this new instrumental method were followed for the analysis of the rest of deposition samples (injection system, ions used for quantification). We did not find significant quantitative differences in PBDE deposition flux data when using the initial or <sup>13</sup>C standards. Nevertheless, to avoid possible influences on data variability, all deposition samples were quantified using the same method.**

P22854 L12: The supplier of the GC column is missing. **This information has been added to the revised version.**

P 22854 L26: Where can I find the blank concentrations? **They were not included in the manuscript, although they could be inferred from the MDL, since MDL were established from the average of blank values plus three times the standard deviation. Blank concentrations have now been added to the supporting information.**

P22855 L4: What are your limits of quantification? **The limits of quantification were established as the average of blank values plus five times the standard deviation. Therefore, they are slightly higher than MDL values, a ratio of 1.1 to 1.4 depending on the compound. MQL have been now included in the QC section.**

And why detection limits are given in  $\text{ng m}^{-2} \text{mo}^{-1}$ ?

**This has been a typo, MDL are expressed in  $\text{ng m}^{-2}$  or in total ng.**

P22858 L16ff: You calculated the trend based on only 2 average values (2004 – 2005 and 2005 – 2006)? If so, it is better to write that the data suggests a decrease or decline in the sampling period and not a "temporal trend". **We have changed this paragraph according to the indications of the reviewer: "Comparison of the average annual values measured between 2004-2005 and 2005-2006 generally showed a decrease of lower-molecular weight PBDEs and BDE209 and an increase of BDE183 in most of the sites (Table 5). However, these differences were only statistically significant in Lochnagar (95% confidence level) for all compounds but BDE100. In the other sites, the differences were only significant for BDE47 in Gossenköllesee and BDE209 in Skalnate. This PBDE deposition flux decline may reflect decreasing emissions as consequence of the implementation of the restrictions in PBDE use and production which occurred during the studied periods."**

P22861 L4ff: Maybe you could add the correlation plots to the supporting information.

We are now adding some of these plots, those most interesting and explicitly mentioned in the manuscript, in the supporting information. Adding them all would involve more than one hundred plots.

P 22879 Table 3: In the table are minimum concentrations which are below your given limits of detection (0.66 and 47  $\text{ng m}^{-2} \text{mo}^{-1}$ ): BDE 100 (Redon) 0.57, BDE 47 (Lochnagar) 0.07, 4PBDE (Lochnagar) 0.43 and BDE 100 (Skalnate) 0.59. Please revise the table regarding this. They are not below limit of detection, since MDL units are  $\text{ng m}^{-2}$ , while data in Table 3 are expressed in  $\text{ng m}^{-2} \text{mo}^{-1}$ . Different collection periods per sample were applied in each site or even in the same site, mainly in winter. Thus, to get comparable data we normalized the fluxes to one calendar month. For this reason MDL values and data in Table 3 are not directly comparable. However, when revising these data we noticed that there was a mistake in Lochnagar for BDE47 (the range of deposition fluxes should be 1.39-77.7  $\text{ng m}^{-2} \text{mo}^{-1}$ ) and for 4PBDEs (the range of deposition fluxes should be 9.06-214  $\text{ng m}^{-2} \text{mo}^{-1}$ ). They have been corrected in the revised manuscript.

Typo errors:

P22851 L9: delete the space between “deca” and “BDE”. Done

P22851 L18: Please add polychlorinated biphenyl and polycyclic aromatic hydrocarbon before the abbreviation, because they appear the first time in the manuscript. Done

P22851 L17: You can delete the abbreviation for semivolatile organic compounds because you do not use it later. Done.

The same for the abbreviation for automatic weather station on P22855 L16. We have added the abbreviation of AWS in section “2.1. Sampling” where it appears for the first time in the text and is used in P22855.

P22852 L12: “analytical standard solution” instead of “Analytical Standard Solution” Done

P22852 L25: “Whatman” instead of “Whatmann” Done

P22854 L4: Space missing between “:” and “hexane”. This was correct in the word file that we submitted for publication. There must be a problem when transferring the text to the journal template.

P22869ff: References: Some paper titles are only lowercase other titles containing also uppercase words. Please revise the references according to the guidelines. They have been revised to fulfill the guidelines. We are using lowercase in titles.