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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Emissions of CFCs, HCFCs and HFCs from India" *by* Daniel Say et al.

Anonymous Referee #1

Received and published: 10 January 2019

Review of Emissions of CFC, HCFCs and HFCs from India

General remarks: The paper presents new air plane measurements of halocarbons over India used for the assessment of emissions. I am in favor of publishing the paper after following points have been carefully considered.

Major issues: In the title it could be mentioned that this is based on measurements. Suggestion: Emissions of CFC, HCFCs and HFCs from India based on atmospheric measurements

The introduction and especially the selection of references has been done in a rather careless way. I suggest that the senior authors on this paper could provide some guidance for correc-tion. Under other issues I will mention some but not all of the instances where things should be changed.

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other issues: P1. L 3 . . .existing atmospheric measurement networks.

L 6 use km instead of miles

L 13 Our total CFCs. . .

L14 I would delete the second part of the sentence (starting from, suggesting. . .), as this does not mean anything

P2 L2 Wallington seems to be a pretty inappropriate reference for this. Either one of the recent ozone assessments could be cited or Molina and Rowland

L 6 Derwent, Velders, inappropriate: one of the recent ozone assessments would be much better

L9 ODSs

L10 wrong! Emissions have been reduced in the last decade. But they are to some degree reincreasing.

L11 be precise: Montzka as Southeast Asia

L16 Article 5 countries (developing countries). . . remark, nobody outside the Montreal protocol knows that

L17 . . .currently still permitted. . .

P6 L18 not all emissions are on-going so I suggest: . . .of these gases could be ongoing. . .

L20 make a reference to section 2.6, where the model is explained

P8 L1 It is strange here obviously new lifetimes are used but in the table 1 still the outdated lifetimes of Mhyrre are used. The lifetimes from the SPARC report should be used in the table. The GWPs could still be from Mhyrre.

L22-26 This is said again behind. Delete it at one place.

P9 L7 Kim 2009 is nearly a decade old data. This is not recent and this should not be used as a justification at all. Things have changed a lot in China in the last decade.

L24ff I cannot follow the argument here. Why should F-134a increase in the canister? If, then it would decrease and why only F-134a should be affected? I would simply delete this whole argument

P12 L1ff The section about HFC-23 should be under the heading of HFC-23 below.

L26 growth? It can be also a decrease, maybe it is development in India's. . .

P20 Figure 2: looking at the high baseline for HFC-32. Is this reason why the HFC-32 emissions are so low? If so that should definitely be corrected.

P26 Use the SPARC update for lifetimes

P28 Potential mistakes in the table. I hope I saw all but please check. This should not be like that at all!

Potentially wrong: CFC-11 target (T) is it really 103? Not 101? Qualifier (Q) is it really 105, not 103 Potentially wrong: CFC-113 T: 151? Q 153? 141b Q wrong HFC-32 T wrong

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