

Interactive comment on “Atmospheric Lifetimes, Infrared Absorption Spectra, Radiative Forcings and Global Warming Potentials of NF₃ and CFC-115” by Anna Totterdill et al.

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We have identified some important errors in our GWP calculations and its comparison to IPCC AR5. The discussion of the NF₃ radiative efficiency is also misleading in places. This does not affect the main findings of the paper or our conclusions but it does effect quantitative details.

These errors are summarised below

1. The Abstract and Section 5.3.3. This incorrectly states that NF₃ radiative efficiencies are 10% higher than those reported previously. In fact the radiative efficiency for NF₃ is 25% higher than that employed in IPCC AR5. The text is also confusing as it is not

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made clear by us that the cloudy-sky adjusted radiative efficiency is the most important estimate that is taken forward into the GWP estimate.

2. Our GWP calculations are wrong in Table 6 as IPCC AR4 numbers were inadvertently used for the absolute GWP estimate in the calculation of GWPs. Further, the quoted IPCC AR5 numbers are not in fact from Myhre et al. 2013, they are rather from the earlier IPCC AR4 report (Forster et al. 2007). Our estimates should be updated to the following 15800, 20100 and 22800 for the GWP20, GWP100 and GWP500 of NF3 respectively. And 6080, 7630 and 8080 for the GWP20, GWP100 and GWP500 of CFC-115 respectively. The Table should refer to IPCC AR4 and not IPCC AR5. IPCC AR5 (Myhre et al. 2013) did not present 500 year GWPs.

3. As a result of the updated GWPs and the incorrect IPCC reference some of the discussion in Section 5.4 is quantitatively incorrect and needs to be corrected.

An updated version of Table 6 is attached with both AR4 and AR5 numbers for reference

We apologise to the reviewers and the editor for these mistakes

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/acp-2016-231/acp-2016-231-AC1-supplement.pdf>

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