

Interactive
Comment

Interactive comment on “Retrieval of ammonia from ground-based FTIR solar spectra” by E. Dammers et al.

Anonymous Referee #2

Received and published: 3 October 2015

<General Comments>

This paper describes the retrieval of NH₃ from ground-based FTIR at four stations in different local surface conditions and different altitudes. The authors succeeded to derive useful information including seasonal cycles and even vertically resolved NH₃ concentrations at some sites. I think this paper gives an important information to understand the nature of global NH₃ budget. The paper is mostly written well and the conclusions are clear, and I recommend this paper to be published in ACP after some minor corrections which will be described below.

<Minor Comments>

1) P.23283, Line 9: I prefer “artifacts” rather than “artefacts”

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- 2) P.23283, Line 22: “CrIS” instead of “CR-IS”
- 3) P.23284, Line 12: It would be better to add some more references for FTIR validation of satellite products, such as; - Wood et al., JGR, 107, 8208, doi:10.1029/2001JD000581, 2002. - Griesfeller et al., JGR, 111, D11S07, doi:10.1029/2005JD006451, 2006.
- 4) P.23290, L.14: 1.9 degrees of freedom → 1.9 degree of freedom
- 5) P.23291, Line 2: DOF of 1. → DOF of 1.0.
- 6) P.23291, Line 24: 34.23 % for the Jungfraujoeh → 34.2% for the Jungfraujoeh
- 7) P.23292, Line 4: Is it really “pressure and temperature broadening parameters” which are critical for the NH₃ concentrations, not “line intensity parameter”?
- 8) P.23292, Line 11: mean column total of 13.7 → mean total column of 13.8
- 9) P.23293, Line 9: As for Bremen → As for Lauder
- 10) P.23293, Line 15: The bottom panel → The third panel
- 11) P.23293, Line 17: 0.82 x 10¹⁵ → 0.80 x 10¹⁵
- 12) P.23294, Line 13: mean of 13.47 → mean of 13.8
- 13) P.23295, Line 1: I prefer “artifacts” rather than “artefacts”
- 14) P.23295, Line 16: NH₃ → NH₃ (subscript)
- 15) P.23296, Line 9: observations at 9.30. → observations at 9:30 local time.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 23279, 2015.

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