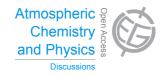
Atmos. Chem. Phys. Discuss., 15, C8095–C8097, 2015 www.atmos-chem-phys-discuss.net/15/C8095/2015/

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ACPD

15, C8095-C8097, 2015

Interactive Comment

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

E. Dammers et al.

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We would like to thank Referee #2 for his/her time, constructive and helpful comments and suggestions.

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

I kept it at "artefacts", British versus US spelling

- 2) P.23283, Line 22: "CrIS" instead of "CR-IS" Corrected as suggested
- 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,

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Interactive Discussion

Discussion Paper



C8095

doi:10.1029/2005JD006451, 2006. Added both references to the manuscript, Changed line 12 to: (Wood et al., 2002; Griesfeller et al., 2006; Dils et al., 2006; Kerzenmacher et al., 2012)

References, Griesfeller, a., Griesfeller, J., Hase, F., Kramer, I., Loës, P., Mikuteit, S., Raffalski, U., Blumenstock, T. and Nakajima, H.: Comparison of ILAS-II and ground-based FTIR measurements of O 3, HNO 3, N 2 O, and CH 4 over Kiruna, Sweden, J. Geophys. Res., 111(D11), D11S07, doi:10.1029/2005JD006451, 2006. Wood, S. W.: Validation of version 5.20 ILAS HNO3, CH4, N2O, O3, and NO2 using ground-based measurements at Arrival Heights and Kiruna, J. Geophys. Res., 107(D24), 8208, doi:10.1029/2001JD000581, 2002.

We also added a few extra references to earlier applications of FTIR techniques to estimate NH3 emissions from fires, P.23284, line 15, Changed "by Paton-Walsh et al. (2005)" to, "from fires (Yokelson et al., 1997, 2007, Paton-Walsh et al., 2005)) but" References: Yokelson, R. J., Susott, R., Ward, D. E., Reardon, J. and Griffith, D. W. T.: Emissions from smoldering combustion of biomass measured by open-path Fourier transform infrared spectroscopy, J. Geophys. Res., 102(D15), 18865, doi:10.1029/97JD00852, 1997. Yokelson, R., Urbanski, S., Atlas, E., Toohey, D., Alvarado, E., Crounse, J., Wennberg, P., Fisher, M., Wold, C., Campos, T., Adachi, K., Buseck, P. R. and Hao, W. M.: Emissions from forest fires near Mexico City, Atmos. Chem. Phys. Discuss., 7(3), 6687–6718, doi:10.5194/acpd-7-6687-2007, 2007.

- 4) P.23290, L.14: 1.9ËŽ of freedom -> 1.9 degree of freedom Good one, changed to degree of freedom
- 5) P.23291, Line 2: DOF of 1. -> DOF of 1.0. Agreed, changed as suggested
- 6) P.23291, Line 24: 34.23 % for the Jungfraujoch -> 34.2% for the Jungfraujoch Corrected as suggested
- 7) P.23292, Line 4: Is it really "pressure and temperature broadening parameters"

ACPD

15, C8095-C8097, 2015

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which are critical for the NH3 concentrations, not "line intensity parameter"? All three are important but the line intensity is indeed the most critical, Changed line 4 to: Hence, line intensity parameters of the ammonia absorption lines are critical for the NH3 concentrations.

- 8) P.23292, Line 11: mean column total of 13.7 -> mean total column of 13.8 The number 13.75 in table 5 was rounded from the number 13.74500. 13.7 is the correct rounded value.
- 9) P.23293, Line 9: As for Bremen -> As for Lauder Removed "As for Bremen" for clarity
- 10) P.23293, Line 15: The bottom panel -> The third panel Corrected as suggested
- 11) P.23293, Line 17: 0.82 x 10ËĘ15 -> 0.80 x 10ËĘ15 Corrected as suggested
- 12) P.23294, Line 13: mean of 13.47 -> mean of 13.8 Corrected to: 13.7, see comment 8.
- 13) P.23295, Line 1: I prefer "artifacts" rather than "artefacts" I kept it at "artefacts", British versus US spelling
- 14) P.23295, Line 16: NH3 -> NH_3 (subscript) Corrected as suggested
- 15) P.23296, Line 9: observations at 9.30. -> observations at 9:30 local time. Corrected as suggested

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

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15, C8095-C8097, 2015

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