

Interactive comment on “How are NH₃ dry deposition estimates affected by combining the LOTOS-EUROS model with IASI-NH₃ satellite observations?” by Shelley C. van der Graaf et al.

Anonymous Referee #2

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The paper investigates the effects of using satellite-derived NH₃ levels in a chemistry transport model on the modeled NH₃ concentrations and deposition fluxes. The paper is interesting and easy to follow. I am in favor of its publication in ACP provided it address the points below.

General Comments

- Can the authors elaborate on why results are different in the two years? - Is meteorology playing a role here? Is it possible to validate the meteorology to enrich the discussions? - In addition, both the original and IASI inferred NH₃ concentrations are overestimated both years. Can the authors discuss why? Is it overestimation in emis-

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sions or underestimation in deposition? - Why are the deposition fluxes not evaluated against observations?

Technical comments

Page 1 Line 33: ...do not show strong improvements. ...

Page 2, Line 30: ...ALLOW us to

Section 2.2. needs some more explanation of how the uncertainty is calculated.

Section 2.4.1. needs more information on the temporal variation of emissions, in particular NH₃.

Page 8, Line 16: Erisman (1993) estimated. ...

Page 9, Line 16: ...dry deposition fluxes IN Eq. (3):

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-133>, 2018.

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