

## ***Interactive comment on “Spatial and temporal variations in ammonia emissions – a freely accessible model code for Europe” by C. A. Skjøth et al.***

### **Anonymous Referee #1**

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The paper addresses an important issue relating to atmospheric pollution with ammonia, namely the temporal and spatial gridding of emissions. The material is highly relevant to the subject matter covered by the journal and the results represent a useful contribution to knowledge concerning the temporal and geographical estimation of ammonia emissions. The level of English in the manuscript is fulfilling and the length of the submission seems appropriate. The recommendation is for publication of the paper.

The introduction/background is fulfilling, however I lack some background regarding what has been done in other countries (except for Denmark) with respect to temporal

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ammonia emission modelling, e.g. in the UK (see for example Hellsten et al. 2007, Modelling seasonal dynamics from temporal variation in agricultural practices in the UK ammonia emission inventory). Page 2129, row 3: Why have these 9 particular measurement sites been chosen? And why only Denmark and Germany? Is this because these are all measurements available, or is it because this is just an initial test of the model performance? Page 2133, row 9: Why have these particular dates (15 February and 15 April) been chosen? Page 2138, row 4-7: These types of data may exist also in other countries, but may not be publicly available due to confidentiality issues.

Consider changing the use of “animals” to “livestock”, which is more appropriate in this context. In the paper, “modeling” / “modelling” is sometimes spelled with one “l” (American English), and sometimes with two “l:s” (British English). Please make sure to choose one of these spellings, to have consistency in the paper. Some references are missing in the reference list, e.g. Dragosits et al. (1998) and Sutton et al. (2000). More references may be missing, as I have not looked through all of them. It is therefore recommended that the author check to make sure that all references are included. Page 2134, row 23: add an “s” to “concentration”. Table 3 & Table 4, table text, row 3: Add a comma “,” to the sentence: “In the first step,” data (new)...” to improve readability. Table 3 & Table 4, table text, last row: Change “unusual” to “unusually”.

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 2123, 2011.

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