

Interactive comment on “Spatiotemporal evaluation of EMEP4UK-WRF v4.3 atmospheric chemistry transport simulations of health-related metrics for NO₂, O₃, PM₁₀ and PM_{2.5} for 2001–2010” by C. Lin et al.

Anonymous Referee #2

Received and published: 22 November 2016

The paper presents a thorough and well laid out evaluation of the performance of the EMEP4UK-WRF model by comparison with observations from the AURN network based on metrics most appropriate to assessment of health impacts. The assessment is thorough and results are presented for a range of station types, for different averaging periods and for a range of pollutants. Explanations are given and discussed for discrepancies between modelled and observed values, such as the model overestimation of O₃ and underestimation of NO₂. I believe the paper fits the remit of the journal, as set out in the GMD Aims and Scope, and I recommend some minor revisions be made as follows:

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Introduction, page 2, line 27-29. The text is slightly confusing since the authors suggest they have undertaken epidemiological studies, although the current paper is not based on epidemiology, rather it is atmospheric chemistry modelling. If the authors are referring to work other than this paper, references should be given at the end of the sentence, or the text made clearer as to what is being referred to here.

Page 3, line 17: please clarify daily mean as 24 hour mean here to remove any potential ambiguity. Section 2.4, page 6: The FAC2 metric is explained here but has been presented earlier in the paper without enough explanation (in Table 1 for example). Introduction, line 4: Suggest add references to COMEAP 2009 report for PM. Line 18: suggest replace “and away from” with “or away from”. Page 14, line 17: “trends” not “trend”

Table 1: Some of the abbreviations need expanding (e.g. FAC2) in the table heading since they are not addressed previously in the text.

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-183, 2016.

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