

Interactive comment on “Analysis of the distributions of hourly NO₂ concentrations contributing to annual average NO₂ concentrations across the European monitoring network between 2000 and 2014” by Christopher S. Malley et al.

Anonymous Referee #2

Received and published: 2 January 2018

General: Well-written summary of NO₂ monitoring data and trends across Europe. Ready for final publication as is. A few comments:

- 1) In terms of the drivers, it would have been interesting to assess correlations between actual met measurements (assuming some are nearby, if not onsite) to see if more robust assessments about the contribution drivers could be determined.
- 2) Wonder if a companion meteorological clustering analyses would have proven valu-

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able, in both the trends analyses and the composition/contribution analyses (i.e., during stagnation events does one see different trends, or greater contribution from rush hours)?

- 3) In the US, we often don't have as much confidence in the metadata associated w/ AQ monitoring sites (e.g., site environs change over time and metadata is not updated). Appears that isn't the case in Europe, but might be interesting to "doublecheck" urban/rural & traffic/background against emissions data, or satellite landuse, or population / other surrogates for emissions.

Specific:

Page 7: May want to combine the first two full paragraphs on page 7 w/ the last paragraph from page 6.

Pag 12: Am struggling to understand sentence that starts on line 31. If those sites in N. Italy have annual averages dominated by winter months, why would photochemical drivers "be a more important" factor. Is this supposed to read "less important"?

Page 13: add "a" before "heavily industrialised".

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-910>, 2017.

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