

Interactive comment on “Random forest meteorological normalisation models for Swiss PM₁₀ trend analysis” by Stuart K. Grange et al.

Anonymous Referee #2

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Scientific review comments

This paper describes the use of a random forest (RF) statistical approach to normalise long-term time series of PM₁₀ measurements from 31 air quality monitoring sites in Switzerland. The advantage of the RF method used in this work is that it is possible to quantify, and hence interpret, the magnitude and significance of the explanatory variables. A number of putative explanatory variables are input into the RF model, but normalising for PM₁₀ variability driven by variation in meteorology is the principal objective (and finding) of developing the normalisation routine.

The paper is a very well written description of the random forest statistical approach for meteorological normalisation of air quality time series, and of the interpretation of the findings of its application to time series of PM₁₀ measurements in Switzerland. The

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work is suitable for ACP and will be of international interest. I have no other scientific comments to make.

Editorial corrections

List of authors: present the superscripted numbers indicating affiliation in numerical order.

P3, L17: Insert 'of' to read '...of what is...'

P11, L13: Change 'than' to 'from'

P12, L6: Insert 'the' to read '...of the analysis period.'

P12, L11: Change to read '...in annual mean PM10 concentrations...'

P12, L26: Add apostrophe for "The suburban sites' lack of..."

P14, L4: Insert 'and that' before 'wintertime concentrations'

P14, L9: Rephrase to "The most important variable at this location was wind speed..."

P17, L4: Add the charge to the sulphate anion, i.e. SO₄²⁻

P17, caption to Fig. 9: Add the charge to the sulphate anion, i.e. SO₄²⁻

P26, L23: Is a URL available for the Fuller and Carslaw report "Putney High Street air quality, Part 2"?

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-1092>, 2018.

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