Reviewer's report

Title: Exploring Associations Between Multipollutant Day Types And Asthma Morbidity: Epidemiologic Applications Of Self-Organizing Map Ambient Air Quality Classifications

Version: 2 Date: 2 March 2015

Reviewer: Bert Brunekreef

Reviewer's report:

Interesting work but not always easy to follow; perhaps adding an appendix about how the maps are produced would help the reader. (I realize there is a reference). As I am insufficiently familiar with the techniques used, I trust a statistician will be asked to review this as well.

The concentration deviations in figure 2 are given as percentages. It would really help to add a table showing how high exactly the concentrations are in each of the nine categories.

The authors are very cautious in their interpretation which I really liked. They also added a figure with effect estimates for individual pollutants showing almost all of them were associated with asthma in their data. I think it would be a useful addition to include PM2.5 and ozone in their analysis of the effects in figure 4. That would more directly let the traditional and the new approach compete with each other....

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

no COI