Reviewer's report

Title: Using New Satellite Based Exposure Methods to Study the Association Between Pregnancy PM 2.5 Exposure, Premature Birth And Birth Weight In Massachusetts

Version: 2 Date: 25 May 2012

Reviewer: C. Arden Pope

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Major Comments:

1. I continue to think that this is a useful and important paper. The research was conducted by a highly competent research team. The methods used are appropriate and represent some important advances. The results are interesting and potentially very important.

2. The authors have been reasonably responsive to previous reviewer comments and suggestions. The expanded analysis using the additional data was appropriate.

Minor comments:

1. In general the paper is well written and easy to read. However, the paper needs a careful proof reading for mostly minor typo/stylistic problems. Examples include: Second page of the Background section, first full paragraph, first sentence; there is extra space before the period. Same paragraph, “The new out of sample . . . “ Should be “out-of-sample.” Same paragraph, next sentence, the last comma before “values” should be deleted. There are several places throughout the paper were the use of commas is questionable (several examples in the first paragraph in the “Covariates” subsection). Also, the paper is inconsistent regarding PM2.5. Sometimes there is a space between PM and 2.5, sometimes not.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.