

## **Reviewer's report**

**Title:** Particulate air pollution and chronic ischemic heart disease in the eastern United States: a county level ecological study using satellite aerosol data

**Version:** 1 **Date:** 19 April 2009

**Reviewer:** Yang Liu

### **Reviewer's report:**

This manuscript explores different methods to use satellite AOD as a predictor of CIHD. It is among the first attempts to link satellite AOD directly with a health outcome, and could be an important contribution to its field after the authors adequately address the following issues.

Minor Essential Revisions:

1. The discussion of the LISA cluster map is inadequate as it does not provide any physical interpretation. Previous research has indicated that the association between AOD and PM<sub>2.5</sub> depends on aerosol composition, vertical distribution, and meteorology, which vary both temporally and spatially. These factors need to be taken into the discussion of the spatial patterns of AOD-SMR association.
2. page 5: current MODIS aerosol retrieval uses three channels (blue, red and thermal IR).
3. page 6: more detail about the temporal averaging of MODIS AOD is necessary.
4. page 8: is the averaging of MODIS AOD to derive county average AOD based on MODIS pixel centroids or areas of a pixel falling into the country boundary?
5. tables 1 - 3: I wonder if the authors could show how much contribution AOD makes to the model R<sup>2</sup>. If including AOD in the model does not significantly improve model R<sup>2</sup>, what is the meaning of linking AOD with CIHD?

**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:**

I declare that I have no competing interests.