

Interactive comment on “The aerosol radiative effects of uncontrolled combustion of domestic waste” by John K. Kodros et al.

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We thank Reviewer 1 for their constructive suggestions. We reproduce the comments here in italics.

Page 3, Line 27. These simulations have a very coarse spatial resolution (4x50). The authors recognise this weakness

Due to computational limits, we use a coarse spatial resolution. This means we are calculating radiative effects using aerosol concentrations and meteorological variables averaged over quite large (about 400 km) spatial scales. As aerosol and meteorological factors vary on much smaller spatial scales, the coarse spatial resolution likely introduces some errors. This may be more important for the AIE, as cloud reflectance has a nonlinear relationship with CDNC. Despite this, we do not expect these errors to

qualitatively change our results and conclusions.

The model evaluation using AERONET AOD demonstrates that including the waste combustion emission source does not degrade the model. The authors could consider using measured BC or OC mass concentrations from regions heavily impacted by waste combustion as an additional evaluation of the model.

This is an interesting suggestion. We did have interest in including measurements of BC/OC mass concentrations; however, robust measurements of mass concentration (especially speciated mass concentrations) are rare in developing countries (which is where most waste combustion emissions are located). One possibility is the SPARTAN network (<http://spartan-network.org/>), which measures PM_{2.5} concentrations in developing countries. Unfortunately, there are not enough measurements available to achieve robust statistics. We would be interested in hearing about other possible datasets.

Page 6, line 31: Suggest reword to remove the word “trend”.

We agree. We are replacing the word “trend” with “variability”.

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Discussion paper

