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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Detecting the influence of fossil fuel and bio-fuel black carbon aerosols on near surface temperature changes" *by* G. S. Jones et al.

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Hello - I appreciate the evident care you have taken to avoid readers over interpreting your modeling results; for such a "hot topic" I believe this a very necessary precaution. However, I wonder if you could expound a little more on an additional uncertainty – namely the impact of the vertical distribution of BC on its TOA and surface forcing, and on your results. Koch's 2009 paper (which you cite) included comparison of various model results to measurements that were vertically resolved, but I don't see much in your paper that gives me an idea of the vertical distributions in your model. Also, I found your comments (page 20926-20927) on model uncertainty opaque - if you believe that

the relative response of your model to different species is more robust than the absolute response to one species, I wonder how you justify this? Finally, perhaps I missed it, but are there any direct comparisons between HadGEM1 and BC measurements to support absolute forcing conclusions?

Many thanks, Joshua Schwarz

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 20921, 2010.