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Interactive comment on “Two hundred fifty years of aerosols and climate: the end of the age of aerosols” by S. J. Smith and T. C. Bond

Anonymous Referee #2

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In this manuscript, the authors have estimated the global emission of black carbon, organic carbon and sulphate aerosols from 1850 to 2100. They have concluded that aerosols will be a minor contributor to the radiative forcing by the end of the 21st century. This analysis is interesting and will be useful for policy makers who want to examine at the relative roles of greenhouse gases and aerosols in controlling global climate. The authors should provide clarification with regard to the following points 1. The authors state that "we also assume that the aggregate emission factor within each sector decreases, as incomes increase". This needs further elaboration 2. There is a need for more discussion regarding assumptions about aerosol emissions in 1850. 3. The global emissions of SO₂ and BC reach a maximum in different years. How sensitive is this result to the assumptions made in the paper. 4. In a recent paper Bond et al.,

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(2013) have shown that global mean BC forcing is $1.1 \text{ W/m}^2 \text{ m}^{-2}$. This is substantially higher than the values used in the present manuscript (figure 5). This difference has to be discussed in greater detail. 5. Figures 4 and 5 are confusing. What do the various colors signify?

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 6419, 2013.

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