

Interactive comment on “Source attribution of light-absorbing impurities in seasonal snow across northern China” by R. Zhang et al.

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Dr. Ming has suggested that a number of studies dealing with deposition of light-absorbing particulates on the glaciers in western China are quite relevant to the work we present here and should be discussed within the context of this study. The studies he cites certainly deal with an issue very much related to the one we study, involving deposition of light-absorbing particulate on snow. However, our study deals with large (geographic) scale deposition onto seasonal snow and is motivated by the impact of this phenomenon on the global radiative balance. The significance of the glacier studies cited by Ming lies in the impact of the deposited particles on the mass balance of the glaciers themselves. While quite important for such issues as runoff, the phenomenon has little impact on global climate. Furthermore, we are interested here in

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the sources of the deposited particulate, and the changes in the sources, over a large geographic scale (we note that in the companion paper to this one, i.e., Wang et al, J. Geophys. Res., doi: 10.1029/2012JD018291,2013, which deals with the observations of light-absorbing particles, we do in fact cite most of the studies suggested by Ming). Hence, we feel that a detailed discussion of the glacier studies is not warranted in this study. On the other hand, we would agree with Ming that it would be useful to cite several of these studies within the context of previous measurements of light-absorbing particulates in snow in Western China and will do so in the revised manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 2155, 2013.

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