Response to Referee (H.-W. Jacobi):

Short comments:
"…. Since their model does not explicitly simulate the snow cover, the BC in sow concentrations are derived from the ratio between simulated total BC deposition and total precipitation. I believe that this assumption introduces additional uncertainties for the BC in snow concentrations that need to be discussed in more detail as is the case in the current manuscript.

  Coarse resolution models like the one used for this study show biases in the simulation of the precipitation. …. Nevertheless, the bias in the total precipitation, which translates directly into a bias for the derived BC in snow concentrations, will probably remain high.

  Moreover, the authors use the total precipitation without distinguishing between solid and liquid precipitation. However, rain has a two-fold impact on the BC in snow concentrations: first, rain should be subtracted from the total precipitation before calculating the snow concentrations, and, second, rain can lead to a significant melting of the snowpack further increasing the BC in snow concentrations. …. Finally, the model uses different parameterizations for the BC deposition in the case of rain or snow. Therefore, the model may generate cases when the BC is removed according to wet deposition by rain, while for the calculation of the BC in snow concentration the accumulated rain is then considered as snow.

  I believe that these uncertainties in the derived BC in snow concentrations should be discussed in more detail. …."

Thank you for your valuable comments. We added discussions on the uncertainties in the calculation of snow BC concentrations.