Editor's Comment

Dear Authors,

I hereby accept your manuscript for publication in ACP.

Please upload a revised file with a rewording of the following lines in the abstract for clarity:

"In addition, by comparing the simulations including versus excluding atmospheric heating of up to 12 K day−1 produced by absorbing black carbon aerosols (BC), we find that the semi-direct effect resulting from this heating lowers the cloud top and reduces liquid water path, while increasing cloud fraction, and thus delays significant cloud break-up until the late afternoon when convection is further strengthened".

Sincerely,

Graham Feingold

Response

It has been modified to "In addition, our sensitivity runs including versus excluding aerosol direct radiative effects have also demonstrated the impacts specifically of solar absorption by black carbon on the cloud life cycle. The semi-direct effect resulted from an excessive atmospheric heating of up to 12 $K\ day^{-1}$ by black carbon in our modeled cases is found to lower the cloud top as well as liquid water path, reduce surface incoming solar radiation and dry entrainment, and increase cloud fraction".