Radiative impacts of the Australian bushfires 2019-2020 - Part 1: Large-scale radiative forcing

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In this manuscript the authors provide results concerning TOA and surface radiative forcing over the Southern Hemisphere due the impact of the extreme bushfires occured during the fire season of 2019-2020 in Australia.
The authors presented a highly valuable data set based on two different instruments of global coverage, the aerosol extinction observations with the Ozone Mapper and Profiler Suite – Limb Profiler (OMPS-LP) and the Ångström exponent observations with the Stratospheric Aerosol and Gas Experiment III on board of the International Space Station (SAGE III/ISS), and the importance of using experimental data as input into radiative transfer models. The authors presents new results of the shortwave clear-sky instantaneous radiative forcing of the Australian fires smoke plume and investigate the impact of different assumptions on the aerosol extinction, single scattering albedo and the asymmetry parameter g of the fire plumes. The manuscript is well written and the results are very important considering the positive or negative radiative forcing impacts on the Southern Hemisphere due different assumptions on the aerosol optical properties and also due clear-sky and cloud conditions. I recommend the article for publication following correction and clarification of a few minor issues described below.

Comments and suggestions

In the lines 100 to 102 the authors claim that "*As in K20, different latitude bands are considered separately, 15° to 25°S, 25° to 60°S and 60° to 80°S; the latitude band 80° to 90°S is excluded due to the limitations of the OMPS observations geometry.*" Please, consider to provide a earth map figure in order to ilustrate the overall region considerated in the RF calculation.
It is not clear if the impacts of RF is for the whole Southern hemisphere. Could the RF results be different over Atlantic region between African and Sputh America Continents?

In lines 115 to 118 the authors state that "*Biomass burning aerosols are more absorbing (SSA as low as 0.80) and smaller in size (g as low as 0.50) in fresh plumes mostly composed of black carbon (BC) and can get progressively less absorbing and larger in size as BC ages and mixes with other emitted species, e.g. by condensation of pyrogenic organic compounds or mixing with pyrogenic secondary organic aerosols or sulphates.*" Please, consider to include some references here.

When the authors presented the variables used in sections 2.2 and 2.3, i.e., the aerosol extinction from the OMPS-LP and the Ångström exponent from SAGE III/ISS, it was not clear if there is an overlap between the measurements of both satellites and if the absence of the overlap affects in some way the RF results.

In figure 5 of pag. 12, please, consider to include a colour label inside the graphics (January: blue, February: green, March: yellow, April: red).

In figure 6 of pag. 14, consider to include a colour label inside the graphics for different values of SSA (darker the shade smaller the SSA).