Interactive comment on “Aging of aerosols emitted from biomass burning in northern Australia” by A. Milic et al.

This paper has been greatly improved after the first revision. After reading through the revised paper and response, a minor revision was considered here:

Major comments:

1) To response 6:

The addressing here is quite right. The dilution will not change the f44/f60 ratios assuming the variation of volatility due to dilution will not change the SOA/BBOA fraction very much. However, the mixing with other plumes which contains comparable or higher OA mass concentration compare to BB plumes, will greatly change the f44/f60 ratio. E.g., If the biomass burning plumes mixed with the biogenic dominated air mass, f60 will decrease and f44 is possibly going to change as well.

Although the authors added the possibility of dilution effect in the explanation, the sentence is not in a proper position (originally in last sentence in the first paragraph of page 10), should be mentioned in the f44 vs f60 explanation of Page 9 line 19 to 21 and other relevant places.

2) For the whole 3.2.2 section.

I did not see the meaning of this paragraph. The ΔOA/ΔCO cannot be used for the SOA formation since the ΔOA/ΔCO (ΔOA or ΔCO) from different fresh BB plumes can vary within a wide range (more than a factor of 10) depending on combustion material, condition etc. E.g., (Aiken et al., 2009). The authors do not know ΔOA/ΔCO from different fresh BB plumes surround this observation site are constant or not. And mixing with fresh or aging plumes from other fires or plumes is possible, which will change the initial ΔOA/ΔCO ratio. I suggest to delete this part.

Similar comment also applies to 3.2.1 section ΔO3/ΔCO. The initial ΔO3/ΔCO is unknown or the authors should give the range of ΔO3/ΔCO for fresh BB plume.

3) Section 3.2.4 (the biomass burning events) is too long. There is too much unnecessary detailed information from each fire. Please shorten this section (cut or move some information to the supplementary materials) and give the necessary conclusion. I did not see the scientific points that the authors want to address here.

Minor comments:

The definition of organics is very wide, which can also refer to gas-phase organics. Please use the abbreviation “OA” instead of “organics” when referring to organic aerosol to avoid confusion.

Page 5 Line 16: add abbreviation name of “(OOA)” after “oxygcnated OA”

Page 16 line 20 not only “the influence of BB emissions”, but also “the aged SOA from different sources.” Can influence this f82 ratio.