

The manuscript ‘Photodegradation of Atmospheric Chromophores: Changes in Oxidation State and Photochemical Reactivity’ provides results on the photochemical aging of atmospheric aerosols (both ambient PM and laboratory generated POA). The results include OC/EC analysis, parallel factor (PARAFAC) analysis of excitation-emission matrices, and photosensitization of  $^1\text{O}_2$  with each measured as a function of solar irradiation. The manuscript has been improved sufficiently for publication. I only have minor comments to improve the readability of the manuscript. My comments are outlined below.

**Minor Comments:**

Line 11: Change ‘result’ to ‘results’

Line 15-16: Change ‘change the compositions’ to ‘changes the composition’

Line 25: Change ‘originate’ to ‘originates’

Line 29: Change ‘process’ to ‘processing’

Line 34-35: Change ‘chromophores are photo-bleached’ to ‘chromophore photo-bleaching’

Line 49: Remove ‘ability on’

Line 55: Change ‘the complex photochemical reaction’ to ‘complex photochemical reactions’

Line 63-64: ‘deactivate quickly with the ways of’ to ‘deactivates by’

Line 80: Change to ‘in *the* laboratory’

Line 132: Change ‘Analysis error’ to “Error analysis”

Line 182: Change ‘opposite’ to ‘in contrast’

Line 186: Change ‘indicate’ to ‘indicates’

Line 187: Change ‘opposite’ to ‘in contrast’

Line 188-190: This sentence is unclear. Consider re-phrasing for clarity.

Line 217: Change ‘consider’ to ‘considered’

Line 259: Change ‘promote’ to ‘promotes’

Line 296: Change ‘lead’ to ‘leads’

Line 307-308: Change ‘...chemical compositions, and photochemical activity. The characteristics of COM photo-degradation were revealed.’ to ‘...chemical composition, and photochemical activity to reveal the characteristics of COM photo-degradation.’

Line 320: Change ‘dominant’ to ‘dominate’

Line 335: Change ‘it’ to ‘this’

Line 339” Change ‘would be” to ‘could’

Line 340: Change ‘celebrate’ to ‘calibrate’. I believe this is the word that is intended.

Line 346: Change ‘COM photodegradation have’ to “COM photodegradation has a’