

We thank both referees and the editor for their thoughtful, constructive, and encouraging comments on our manuscript. We greatly appreciate the time and effort they have invested in reviewing our work. Their feedback has been highly valuable in improving the clarity, completeness, and overall quality of the paper.

In the following, we provide a point-by-point response to the editor's minor comment. For clarity, the editor's comments are shown in *italics*, and our responses are given in regular (non-italicized) text, any quotation and addition of new sentences in the revised manuscript are shown in **bold**.

General comments from the editor

There is one remaining issue to address prior to accepting your manuscript for publication. In Figure S2 in the SI, the UV light spectrum for the Rayonet photoreactor is shown. This has a significant tail < 280 nm and even a prominent small peak around 250 nm. Photons < 280 nm are not present in the troposphere, and usually efforts are made in such environmental photochemistry experiments to filter out photons < 280 nm. These higher energy photons can excite chromophores and drive photochemistry that is not accessible in the true UVB region > 280 nm.

This is not a fatal flaw but the presence of UVC light in these experiments and its possible interferences through driving photochemistry not possible in the troposphere or at the Earth's surface will have to be made clear in the main manuscript. Going forward I would suggest looking for other UVB lamps that do not emit < 280 nm.

Response: The editor's comment is noted. We have revised the stated wavelength range in the revised manuscript:

Page 5 line 122: **"The photon flux in the photoreactor ranged from 250 to 400 nm and peaked at 311 nm (Figure S2a)."**