

Abstract line 6:

Suggestion to add “model” after chemistry-climate to improve clarity (“...a global atmospheric chemistry-climate **model** coupled with a dynamic global vegetation mode...”

Lines 43-45:

The processes being described are not necessarily unique to biogenic precursors. Minor wording changes are suggested to make that, and the rest of the paragraph, clearer:

As a result, monoterpene precursors may have distinct climate impacts given their influence on the aerosol numbers. **Through condensational growth**, bSOA participates in the absorption and scattering of solar short-wave radiation, contributing to aerosol-radiation interactions (ARI). Furthermore, newly formed bSOA particles can **grow into sufficient sizes** to activate as cloud droplets, thereby modifying cloud properties such as albedo and lifetime, and effectively contributing to aerosol-cloud interactions (ACI) (Forster et al., 2007).

Question: One of the reviewers asked about the role of biogenic compounds in NPF. As I understand it (based on your response and edits to the manuscript), in the GMXe model, biogenic compounds are not considered and do not affect number concentrations. They can only contribute to condensational growth. If this is correct, I suggest to add a sentence in the introduction (after lines 43-45), clarifying that only the contribution to ARI is considered in this work (or alternatively, that the contribution to REaci by this mechanisms is not considered). I do see that you report on changes in REaci. I’m not sure what the mechanism of change would be (since it is not enhanced NPF by biogenic precursors), and maybe that needs to be clarified in the results if it has not been already (e.g., in paragraph starting on line 273, 295, 461).

Line 300:

Suggestion to remove “Dot hatching...” sentence starting on line 300, since it was noted in the text already (for a different variable) and is noted in the figure captions.