

Bannister, E. J., Jesson, M., Harper, N. J., Hart, K. M., Curioni, G., Cai, X., and MacKenzie, A. R.: Residence times of air in a mature forest: observational evidence from a free-air CO₂ enrichment experiment, *Atmos. Chem. Phys. Discuss.* [preprint], <https://doi.org/10.5194/acp-2022-318>, in review, 2022.

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Authors' responses to referee's report #1 following the initial round of revisions to our manuscript.

10 **The authors thank Tobias Gerken (RC1), the anonymous reviewer (RC2), and the Christoph Gerbig, the handling editor, for their continued effort and helpful suggestions.**

In accordance with RC1's suggestions, we have:

1. **Moved the illustrative example of the Damköhler number to the main results/discussion section (section 3.2). This avoids introducing new material in the conclusions.**
- 15 2. **Improved the discussion of the effects of canopy density on the residence time of air (lines 83–93).**

We also made a small number of stylistic changes (correcting 'compared to' to 'compared with' and using hyphens where compound nouns serve as adjectives).

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