

# ***Interactive comment on* “Evaluation of a field-deployable Nafion-based air drying system for collecting whole air samples and its application to stable isotope measurements of CO<sub>2</sub>” by Dipayan Paul et al.**

## **Anonymous Referee #2**

Received and published: 8 April 2020

1. Does the paper address relevant scientific questions within the scope of AMT? Yes.
2. Does the paper present novel concepts, ideas, tools, or data? Yes.
3. Are substantial conclusions reached? Yes.
4. Are the scientific methods and assumptions valid and clearly outlined? Yes.
5. Are the results sufficient to support the interpretations and conclusions? Yes.
6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Yes.
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes.
8. Does the title clearly reflect the contents of

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the paper? Yes. 9. Does the abstract provide a concise and complete summary? Yes. 10. Is the overall presentation well-structured and clear? Largely, yes. See 13. below. 11. Is the language fluent and precise? To large extent yes, but improvements are possible. Check for typos and missing punctuation. 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Yes. 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? There are some repetitions in the text that may be omitted without losing information. Figure captions are too lengthy. 14. Are the number and quality of references appropriate? Yes – with the exception that I would welcome seeing a reference or two more on Nafion usage for CO<sub>2</sub> measurements (and possible uncertainties related to this). 15. Is the amount and quality of supplementary material appropriate? Not applicable.

#### General comments

The authors are presenting their work on a Nafion-based air drying system for collecting whole air samples and its application to stable isotope measurements of CO<sub>2</sub>. This is a contribution well in scope of AMT. It describes equipment and procedures that will prove useful to everyone who aims for taking air samples for high quality measurements of CO<sub>2</sub> and other trace gases in challenging environments. The analytical approach and validation methods are sound and well documented. If some minor shortcomings are addressed (see a separate file named “amt-2019-295-supplement.pdf”), I recommend publication of this manuscript in AMT. Data from the manuscript should be available in a freely accessible repository or as supplement to the paper, not upon request with the authors.

#### Specific comments and technical corrections

They are included in a separate file named “amt-2019-295-supplement.pdf”.

Please also note the supplement to this comment:

<https://www.atmos-meas-tech-discuss.net/amt-2019-295/amt-2019-295-RC2-supplement.pdf>

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-295, 2019.

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