

Review of Hellén et al., Measurements of atmospheric C10-C15 biogenic volatile organic compounds (BVOC) with sorbent tubes', revised submission to AMT.

General:

The ms by Hellén et al. is focusing on the performance of adsorbent tubes and their analysis for the detection and quantification of C10-C15 BVOC. Adsorbent tubes have been the backbone of BVOC emission studies and even nowadays as 'online-techniques' (e.g. PTR-MS) got more and more available adsorbent tube sampling is important for compound specification (as e.g. PTR-MS can't distinguish MT species sharing the same mass), for use at sites with limited infrastructure or for process studies where the focus is not on longterm monitoring. Thus, detailed information on limitations and performance of these adsorbent tubes is urgently needed by the community especially for compounds which have not been in the focus before. In this sense this paper is an important contribution useful for a wide audience. The paper in general is well written with a clear structure and contains lots of useful information for the community that helps to improve sample setups and assess methodological challenges.

However, compared with the original submission, results and discussion of the breakthrough volumes has been improved, but I think this section will benefit from adding more information. If you aim to compare self-packed and commercially packed adsorbent tubes, a possible difference in breakthrough volumes could be caused by the mass of the sorbent in the tubes or its quality. Can you please add the mass of sorbent per tube to text and/or Table S1? Also, the breakthrough will depend (besides other) on the concentration of the gas sampled, and the authors have mentioned concentrations of the sample gas of 0.2 to 10 nmol/mol (L211). I suppose this range is caused by the different compounds, and the concentration used for each individual compound during the test have been constant? Then, comparing breakthrough volumes is rather misleading, as the amount of absorbed compound would depend both on volume and concentration of the sample air (amongst other). I would ask the authors to clarify this, e.g. by adding sample air concentration per compound to table 4, or adding the total absorbed mass per tube and compound.

Specific comments:

- 1) L13-17: I would recommend to change the order of sentences, e.g. have 'Even though online measurements...' first, then 'In this study...' to have a more logical order.
- 2) L16: '...online GC...'; shouldn't that be all online techniques here, e.g. even PTR-MS? The remaining part of the sentence is unclear to me. Please rephrase.
- 3) L19-22pp: I think it would be worth stating in the abstract that no multibed configurations have been tested here.
- 4) L31: quantify here, how good was the agreement between the two labs?
- 5) L52: one '(' too much.
- 6) Ch 2.4, breakthrough tests: tell how many tubes were used for these experiments.
- 7) L319: insert 'were' between filters' and 'inserted'

- 8) Tab3: 'new filter that has been used...' is a bit awkward I think, what about 'aged or used filter' instead. Tell how long it had been used before and for which kind of measurements (low/medium/high concentrations).
- 9) L355: '...TA tubes both stored at...'
- 10) L358: significant at which level?
- 11) L395: 'In earlier studies the impact...'
- 12) L401: what is a x-fold reduction? Reduced to y %?
- 13) Fig2: Any possibility to give the numbers of samples here? At least in the caption (N=x for ...)
- 14) L402: 'For >C5 components ...was detected'. By Ho et al.? Unclear what you are referring to here.
- 15) L426: 'In tubes on Tenax TA...', connect with next sentence!