

## ***Interactive comment on “Organic tracers of fine aerosol particles in central Alaska: summertime composition and sources” by Dhananjay Kumar Deshmukh et al.***

### **Anonymous Referee #2**

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General this is a study of particle organics collected in Fairbanks, Alaska in the summer of 2009. This is now some time ago but if the data obtained are interesting they might merit publication even after one decade. Detailed chemical particle analysis can be tedious and I feel this paper delivers interesting data and their sound interpretation even though the results are not 'real-time'.

The paper is beyond standard as it delivers analysis data on lignin and resin products the analysis of which is usually not being done. The same is true for the determination of the phthalate esters.

Overall, I feel the paper is well in the scope of ACP and could be accepted after a

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revision which is somewhere between minor and mayor.

## Details

Abstract, last sentence: Is this sentence needed ? How would that connection work ? Can you add a few words ? See also last comment below here.

P6, l 151 ff: It would be great to document all of the individual analysis results, e.g. in a data file as part of the supplement. The information content of Table 1 is a bit sparse.

P7, l 165 ff: The analysis of these compounds in my view is a highlight of the paper. Maybe it could still be improved in that possible oxidation of the anhydrosugars is included in the discussion and properly referenced. Levoglucosan and the other compounds have been shown to undergo atmospheric oxidation in both the gas phase and the condensed phase and it would be good to include that here.

Based on the leveoglucosan determinations: Can you estimate the PM mass concentration contribution fm woodburning ? That would be a great additional number and result.

P14, l 410 ff: Can these tracer determinations also be used to estimate a mass or mass fraction contribution of plastic burning to the analysed PM ? That would also be interesting.

P18, l 548 ff: The end of the conclusion is interesting and the thought that these Alaskan BB particles might affect the Arctic ( where such particles are also measured) should find its way into the abstract to substantiate its current last sentence.

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-293>, 2019.