

## ***Interactive comment on “Counting on Chemistry: Laboratory Evaluation of Seed Material-Dependent Detection Efficiencies of Ultrafine Condensation Particle Counters” by Peter Josef Wlasits et al.***

### **Anonymous Referee #3**

Received and published: 3 March 2020

This paper investigates the effect of particle composition on the measured cutoff of a number of different CPC models. This is an important technical study, as this is (by default) usually characterised using silver nanoparticles, which may not be representative of the particles of interest in the atmosphere during new particle formation events. This paper highlights fundamental differences in the behaviour of different CPCs according to working fluids and whether the particles are organic or inorganic. While the results are not unexpected, they should assist in the characterisation of instruments and interpretation of ambient and laboratory data. This paper is within scope of AMT, the methods used are appropriate and the work methodically presented. I therefore recommend publication subject to the following technical comments:

C1

General: Please use a different method to denote the tuned instrument rather than an asterisk, as this normally implies a footnote. Suggest superscript-‘T’

Page 3, line 12: The purities and grades of all of the chemical stocks should be stated, including the solvent used for the BCY solution. Also state the concentration of the BCY solution.

Page 4, line 18: State the method used to generate ozone and control the concentration

Page 5, line 24: Please do not use the word ‘saturates’, as this could cause confusion.

Page 6, line 5: Is this not related to the particle’s solubility rather than polarity?

Page 6, line 19: The word ‘astoundingly’ isn’t particularly scientific. Please describe what aspect was unusual or unexpected.

Page 7, line 11: The phrase “The effect of just readjusting temperatures can be clearly seen too by . . .” is very clumsy. Please reword.

Page 8, line 32: Remove brackets around the reported statistic

Page 10, line 6: The statement about the work being performed independently should really come under the competing interests statement. Could the same statement about TSI be extended to Airmodus?

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-486, 2020.

C2