

## ***Interactive comment on “Global analysis of continental boundary layer new particle formation based on long-term measurements” by Tuomo Nieminen et al.***

### **Anonymous Referee #1**

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This manuscript compiles and re-analyzes new particle formation and growth statistics from 36 surface sites. It is great to have all of these data in one places and analyzed homogeneously. I am very happy with the manuscript, and I only have a few minor comments. I feel it is ready to be published in ACP once these comments are addressed.

L6-7: Why, specifically, are only March-May and Dec-Feb being compared here? Is March-May the max and Dec-Feb the min? It would be good to say this, because now the choice seems arbitrary.

Throughout: “Westervelt” is misspelled as “Westerveld” is several places.

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L88-97 and L509-516: Why is the free troposphere not mentioned here? Nucleation in the FT is hugely important for CCN (Merikanto et al., 2009).

L408-410: This sentence is strange. It's discussing the factors that determine  $J_{nuc}$  when  $J_{nuc}$  is inferred from  $dN(10-25nm)/dt$ , GR, and CoagSink; however, the sentence is written as if  $J_{nuc}$  \*depends\* on these values.  $J_{nuc}$  depends on vapor concentrations and temperature. It's only inferred using  $dN(10-25nm)/dt$ , GR, and CoagSink.

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