

## ***Interactive comment on “On the growth of nucleation mode particles: source rates of condensable vapor in polluted and clean environments” by M. Kulmala et al.***

**Anonymous Referee #1**

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Summary: the authors review Scanning Mobility Particle Sizer (SMPS) data from six sites around the globe. The sites range from extremely clean (Antarctica) to heavily polluted (India). The authors use a well-documented and consistent method to calculate condensational growth rates following new particle formation events. This is an important work because of the element of standardization provided by using the same techniques, applied by the same author, and using very similar instrument packages in each city. The work is brief and to the point, making for excellent reading. The authors are able to do this by appropriately citing the extensive works of the Kulmala group on atmospheric nucleation.

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Specific comments:

Equation (1) neglects changes in the vapour concentration of C due to changes in the vapour pressure of C with temperature and from changes in the activity coefficient of C. For the cases in question, these are probably minor. I assume these neglected terms are discussed in the cited works (Kulmala et al. 2001a and Kulmala et al. 1998). A brief reminder for the reader that there are negligible terms in equation (1) might be helpful for some readers.

Page 6950 / Line 14: spelling error “catecorized”

Page 6951 / Line 2: change “form” to “from”

The authors have chosen to keep the presentation of data the same for the 6 sites even though there is much more data from the SMEAR I and SMEAR II sites. In other words, each site has the same presentation in Table I. It is this reviewer’s opinion that, either in this work or another work, the full statistics of CS, GR, C, and Q should be presented for the Finnish sites.

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