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Interactive comment on “Formation and growth of nucleated particles: observational constraints on cloud condensation nuclei budgets” by D. M. Westervelt et al.

A. Laaksonen

ari.laaksonen@uef.fi

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Comment by Ari Laaksonen and Amar Hamed

We would like to comment on the observed CN100 in Po Valley. The authors conclude that the contribution from nucleation events to total CN100 concentrations is 4%. This is in contradiction to our previous estimate (Laaksonen et al. 2005) which is close to 40%. The authors use a subset of our data (one year whereas we used two years). It appears to us that the estimated contribution to CN100 concentrations from nucleation events (about 500 per cc) is in good agreement with the numbers given in Laaksonen et al., 2005, and the problem is with the total average CN100 concentration. If the

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4% was correct, the average CN100 concentration in Po Valley would have to be over 12 000 per cc which is much too high. In fact, the average CN concentration (for all particles larger than 3 nm) in Po Valley is just 12 000 per cc (Hamed et al, 2007).

We would also appreciate a proper referencing of the Laaksonen et al, 2005 (not 2004) paper in the text and in the reference list.

Laaksonen A., Hamed A., Joutsensaari J., Hiltunen L., Cavalli F., Junkermann W., Asmi A., Fuzzi S. and Facchini M.C. (2005): Cloud condensation nucleus production from nucleation events at a highly polluted region. *Geophys Res Lett* 32, L06812. doi:10.1029/2004GL022092

Hamed, A., Joutsensaari, J., Mikkonen, S., Sogacheva, L., Dal Maso, M., Kulmala, M., Cavalli, F., Fuzzi, S., Facchini, M.C., Decesari, S., Mircea, M., Lehtinen, K.E.J. and Laaksonen A. (2007): Nucleation and growth of new particles in Po Valley, Italy. *Atmos Chem Phys* 7 355-376.

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