

Interactive comment on “Characterization of positive air ions in boreal forest air at the Hyytiälä SMEAR station” by U. Hörrak et al.

Anonymous Referee #2

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My comments are as follows:

The article by U. Hörrak et al.: "Characterization of positive air ions in boreal forest air at the Hyytiälä SMEAR station" treats the behavior of the concentration of positive small (or cluster) air ions and naturally charged nanometer aerosol particles (aerosol ions) in a boreal forest. Especially, the balance of small ions in the atmosphere have been given for the nucleation event days and non- event days. The dependence of small ion concentration on the ion loss due to aerosol particles was investigated applying a model of bipolar diffusion charging of particles by small ions. The small ion concentration and the ion sink were closely correlated when the fog events and the hours of high relative humidity as well as nocturnal calms and weak. The hygroscopic growth correction of measured aerosol particle size distributions was found to be nec-

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essary for proper estimation of the ion sink. No clear indication of positive ion depletion by ion-induced nucleation was found.

Some general comments:

The paper seems to be appropriate for the journal. I also understand that the title adequately represents the content of the paper. The assumptions are valid and the methodology seems to be fairly sound. The conclusion is logically followed.

My opinion is that this paper puts the progress it reports in the context of existing published work. The authors use relevant references in their study and most of the references are from the last years, but they refer also to older papers, which is very.

The introductory discussion seems to be well done. I do not found any problem concerning a clearly and concisely written paper. The text and references are easily understood.

I am very satisfied that the authors have done successful measurements in different weather conditions.

As a conclusion my opinion is that the paper is well worth a publication.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 9465, 2007.

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