

Interactive comment on “Cold oceans enhance terrestrial new-particle formation in near-coastal forests” by T. Suni et al.

Anonymous Referee #2

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General: Studying the parameters influencing new particle formation has still relevance since these factors are not very much understood. For this reason Authors' goals in this paper can be regarded original and could be published. In this manuscript the Authors give a summary of a well organized and carefully arranged research work. However, before publication some issues in the paper have to be clarified.

Major comments:

Authors note that the distance from ocean/sea and the cities is very important in this kind of studies. What do you mean under too close to the coast, and what is the necessary minimum distance from the coast and from the cities in order to reach “free from antropogenic influence”? Please give some numbers on it especially for Tumberumba site. I could not find information on it neither in the text, nor in Fig.1.

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The discussion on NPF in the context of wind directions is interesting and generally informative. (Exception: e.g. Fig 3 is not clear for me and I could not follow the explanation of this figure on page 13099 from line 21;).

From the results (page 13100 from line 28) it is shown that the air masses from southwest are dryer than the air from NE. This is clear evidence for “dry”, but not for “clean” air mass. Authors connect these two properties; however, this latter should be proved by data. Could you please include some experimental data e.g. SO₂, VOC or others?

The last part of “Results and Discussion” concerns VOC. After a detailed discussion of the contradictory results published by Bonn et al and the work of Jonnson et al., Authors shortly summarize their results on their VOC measurements. (Note: the sampling and the analysis were carefully carried out!) The experimental data are just presented in a table but unfortunately further exact discussion of them regarding NFP is quite incomplete. This summary is descriptive and rather speculative. I cannot see convincing evidence for their influence on aerosol formation.

I feel too much simplified the conclusion that relative humidity is the only parameter that reduces NPF events. Are you sure in it; and no other parameters can influence it?

To my opinion too much figures/tables are included to the text. Some of them may not be necessary. Please consider reducing the number of figures/tables. In Table 1 the data of Fig 2 and Fig 5 is presented; from Figs. 8-9 and Figs.10-11 (on latent heat: two figures – one sentence) all of them are necessary?

Minor comment:

Please include that which seasons are represented by a, b, c and d in Fig. 5!

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 13093, 2009.

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