

Interactive comment on “Relationship between snow microstructure and physical and chemical processes” by T. Bartels-Rausch et al.

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We like to thank the two referees and the editor for their valuable feedback and well-received comments on “Relationship between snow microstructure and physical and chemical processes”. Generally, we agree to your judgement of the manuscript and will carefully address your comments in a revised version. Indeed, I think your comments are most useful to significantly improve the review.

In particular we have started to:

* Include much more pictures, graphs, and figures throughout the manuscript. Improve Figure 1, by more clearly separating the true picture of ice grains from illustrations of the domains.

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* Rewrite section 3 (physical processes) to make it more review like, similar to the way section 4 (chemistry) is written.

* Combine description of MD simulations and of thermodynamic models of the QLL in section 2. Move discussion on liquid and brine from sections 3 and 2 to section 2. Highlight and separate the discussion on pure ice vs. frozen solutions more clearly.

* Overall condense, improve readability, and state vision clearer.

* Shorten the conclusions of each sections and formulate a few short take-home messages (as we had done in section 4).

Taken the number of authors involved, I hope for your understanding that this will take a little longer. And I hope for your of this rather short reply. We will highlight in detail how we have considered your comments when we submit a revised version.

Kind regards, Thorsten Bartels-Rausch

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 30409, 2012.