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***Interactive comment on “X-ray computed microtomography of sea ice – comment on “A review of air–ice chemical and physical interactions (AICI): liquids, quasi-liquids, and solids in snow”, by Bartels-Rausch et al. (2014)” by R. W. Obbard***

**R. Obbard**

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Thank you for your review and comments. I agree with your observation that

"Quantifying the fraction of liquid is an important point when XMT should be applied to monitor impurities in snow or lab-grown ice as concentration in the melt might be lower than that in brine of sea-ice. The key question in context of snow research is whether

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the phase and distribution of impurities can be investigated without the need to refer to the phase diagram. Currently, we lack experimental proof of the phase of impurities (solution vs. participate) and of their distribution within most, if not all, samples. I think we agree that XMT is a powerful method to tackle this issue, but application to snow or lab-grown ice remains a challenge. I hope that this is the message that the reader can take home from this paragraph and that this short paragraph creates interest in the use of XMT for the ice and initiate its use to observe impurities in snow samples."

This is indeed a challenge. The solution may lie in the use of two complimentary techniques, XMT and another. An interesting problem for those analyzing impurities in snow.

I too am sorry that we did not have a chance to sort this out prior to publication. It is my fault for not seeing and weighing in on your paper during its interactive discussion phase. We were in the midst of a major tragedy in my family, and I didn't get back to full productivity, and see your paper, until several months later. Hopefully the availability of both of our papers will prove instructive to the reader.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 13167, 2015.

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