

***Interactive comment on “Brief communication:
ikaite ($\text{CaCO}_3 \cdot 6\text{H}_2\text{O}$) discovered in Arctic sea ice”
by G. S. Dieckmann et al.***

Anonymous Referee #2

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The Dieckmann et al brief communication, set-up an interesting finding about the ikaite in Arctic sea ice. The authors discuss the methodology, that seem to be well established by Antarctic experience, and maintain the "cold chain" from the sampling area to the Labs, important for the ikaite stability (despite the ethanol problems). Personally, as I agree with the morphological reconnaissance of ikaite, I suggest to improve the dataset with results from other techniques (as the cited XANES and XRD) with instrumental set-up. However, to increase the readability of the paper, I suggest to add data from marine water chemical and physical measurements (a simple table). The results show the presence of ikaite in all the ice core measured, but is not clear why the maximum concentration of ikaite are in the upper sections below the snow cover. I suggest to include one sentence to explain or underline the problem. The phosphate concentration on seawater is very low, but is not clear where was sampled (which depth, which posi-

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tion respect the samples area). Did the salt expulsion during the ice formation increase locally the salinity (and the phosphate) concentration? I understand that this is a brief communication and the authors clearly indicate future works, but I suggest to include a simple sentence about this problem. I suggest the publication with small changes.

Interactive comment on The Cryosphere Discuss., 4, 153, 2010.