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Interactive Comment

Interactive comment on "Precipitation of salts in freezing seawater and ozone depletion events: a status report" by S. Morin et al.

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General comments A very interesting study. However, the calcium carbonate polymorph that precipitates in sea ice is not calcite but ikaite. This was recently affirmed by Dieckmann et al. (2008). Thus, I'm sorry to say, the main assumption for the FREZCHEM calculation is wrong.

I can not say if this makes a large difference for the alkalinity and the conclusions. There is the need for new laboratory experiments to obtain the Pitzer potentials for natural seawater and sea ice.

Specific comments Richardson (1976) has not measured the calcite precipitation directly. He has just inferred the amount of precipitates from the brine content which was



measured using nuclear magnetic resonance spectroscopy [Richardson and Keller, 1966].

Dieckmann, G. S., G. Nehrke, S. Papadimitriou, J. Göttlicher, R. Steininger, H. Kennedy, D. Wolf-Gladrow, and D. N. Thomas (2008), Calcium carbonate as ikaite crystals in Antarctic sea ice, Geophys. Res. Lett., 35, L08501, doi:10.1029/2008GL033540.

Richardson, C. Keller, E.E., The brine content of sea ice measured with a nuclear magnetic resonance spectrometer, Journal of Glaciology, 1966

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 9035, 2008.

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