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Interactive comment on “The rate of water vapor evaporation from ice substrates in the presence of HCl and HBr: Implications for the lifetime of atmospheric ice particles” by C. Delval et al.

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I appreciate the response by the authors to the suggestion that Fig. 9-11 were possibly misleading based on the uncertainty of the ordinate scales. The suggested change to the figures is clearly a step in the right direction both for clarity, and for placing the results in a better light. However, I still have a problem with what seems to be inordinate intensity in the hydrate bands (if one accepts that the acid dosage was the near monolayer amount described in the paper). It is unusual for the peak intensities for hydrates per water molecule in a sample to exceed the value for ice itself (though I think it does so in the fully ionic crystalline monohydrate of the HX acids). From that basis, the 50 nm estimate by the authors of the thickness of the hexahydrate film of

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Fig. 9 is reasonable. But the 500 Angstroms corresponds to more than 100 layers of the hydrate whereas one would expect perhaps 6 to 10 layers based on the reported dosage. So even with the change in the ordinate of Fig. 9, there still appears to be an order of magnitude too much acid in the film, a conclusion that, in turn, raises questions about much of the study.

As a secondary note, it appears that, in the authors response to my comments, there has been a confusion between thickness in micrometers (μm) vs millimeters (mm).

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 2179, 2003.

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