

Referee 2

In the following, the referee's comments are reproduced (black) along with our replies (blue) and changes made to the text (red) in the revised manuscript.

General Comments:

This appears to me to be an excellent manuscript in all respects. I view it as most valuable as a quiet challenge to others to be more determined to present quantitative results where possible. The authors have met that challenge for a difficult case and I am moved to offer praise particularly because the paper is fully descriptive of what they have done and how/why the quantitative character places it above so many of the otherwise comparable studies. Of course quantitative results are not always possible.

We thank J. Paul Devlin for this very positive assessment of our manuscript.

Specific Comments:

I would suggest that within the first paragraph of page 6, the numerical values of 0.2 and 0.018, differing by an order of magnitude, do not seem to fit as used.

This was a typo: The value 0.2 should have been 0.02. We now write:

A linear relationship between γ_{trap} and V_{IG} was observed for values of γ_{trap} up to ~ 0.02 . At larger ice growth velocities some datasets indicated a fall-off in the slope of γ_{trap} versus V_{IG} , the cause of which may have been a transport related limitation to uptake of HCl to the ice, whereby gradients in the HCl concentration close to the ice-surface result in a reduction in mass-transfer of HCl to the ice. As no simple scheme for correction of the diffusive limitation to uptake exists for the complex geometry of the reactor, values of γ_{trap} greater than 0.018 (10% less than the maximum value (0.02) at which linear behaviour was still observed) were neglected in the final analysis.
