

Interactive comment on “Continuous in situ measurements of anchor ice formation, growth and release” by Tadros R. Ghobrial and Mark R. Loewen

Authors Response to **Referee #2** (received and published: 23 August 2020)

The authors wish to thank Referee #2 for their constructive comments and suggestions. We have responded to each of the comments from the reviewer. The comments from the reviewer are in black font and our responses are in red font.

1. Referee #2:

This is an interesting paper presenting some novel finds on anchor ice formation. This paper should have a large impact on the readership. Some minor revisions are required before it is published.

Authors Response:

Thank you for your positive feedback on our paper and for highlighting the significance of the presented results.

2. Referee #2:

Page 1, Line 24: rapid what?

Authors Response:

We will clarify the last sentence of the abstract to read:” Anchor ice was observed releasing from the bed in three modes referred to as lifting of the entire accumulation, shearing of layers of the accumulation and rapid release of the entire accumulation.”

3. Referee #2:

Page 4, Line 9: should read “ice accumulation densities”?

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.

4. Referee #2:

Page 7, Line 8: was the flat side facing down or up on the plywood base?

Authors Response:

The flat side of the substrate materials were facing down on the plywood base to increase the gluing contact surface between the base and the gravel.

5. Referee #2:

Page 7, Line 20: What did the change in camera housing do?

Authors Response:

The camera housing was changed due to some damage to the original housing resulting in water leaking inside the case.

6. Referee #2:

Page 10, Line 30: should read “ice crystal growth”?

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.

7. Referee #2:

Page 10, Line 33: should read “grew at approximately linear rates ...”.

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.

8. Referee #2:

Page 12. Line 9: should read: “crystals, or”.

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.

9. Referee #2:

Page 13, Line 13; should read “The crystal sizes”.

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.

10. Referee #2:

Page 15, Line 12: should read: “to be predicted at each”?

Authors Response:

Thank you for catching this mistake. The text will be updated as suggested.