

## **Responses to comments by reviewers of manuscript tc-2020-300 “Behavior of Saline Ice under Cyclic Flexural Loading”**

We thank anonymous referees for additional comments on our work. We have modified our manuscript according to them. Please, see all the responses in red.

### **Comments from Referee # 2**

Line 140; it is stated that “loading under constant displacement rate”. Was control based on the actuator movement? That would mean that the displacement transducer (LVDT) was being used for measurement, not control. Also I presume reversal of the actuator movement direction was based on a force measurement limit, since report cycling between stress limits. This may have been described in your previous papers, but a sentence or two explaining this here would add to the understanding of the experimental method.

We added the following sentence: “The hydraulic actuator was driven up and down under displacement control with the load limited in both directions”.

Line 156; Equation (1) is correct for loading at quarter-points, that is the centre span is half the distance between the outer loading points. While this may be the usual case it is good to be specific.

We added the following (lines 154-155): “the loading span is  $\frac{1}{2}$  of the support span”. This can also be seen in Figure 5 where we provide all of the dimensions of our 4-point bending apparatus.