

Response to Reviewer 2 (Bill Glude)

As pointed out to reviewer 1, we are currently assessing the accuracy of longer ECTs and PSTs done side-by-side with regular length tests.

In regards to the nonpersistent weak layers, it would be nice get some longer beams to fully propagate on nonpersistent weak layers, but we have never observed this. Two of the authors have done extensive testing in maritime areas that receive high precipitation intensities, but we have not been able to get beams longer than 2 m to fail on nonpersistent weak layers. We suggest this is not a timing issue. For instance, the first author has gone out during most major storms over the past several years and attempted long stability tests on nonpersistent weak layers if shorter tests propagated. Consistently, the longer tests will not propagate in the storm snow. We suggest this lack of propagation has to do with the soft slabs that are common with nonpersistent weak layers. These slabs often are often too weak to withstand the triggering and bending phase of the collapse wave. Another possibility is that these storm slabs are more dependent on radial propagation, as opposed to the straight ahead propagation tested by the ECT/PST. In other words, support on the side of the beam may be more important in getting a nonpersistent weak layer to propagate a long distance.

Comment on moving figures. We realize having figures at the end of the manuscript makes all drafts less readable, but it is a standard requirement for copy editing.

p 232 | 4 We did not include pictures but added three sentences describing the CECT and CPST.

p 234 | 5 r_c is explained in the introduction and Fig 2 shows the PST setup, including where r_c is measured. If the reader is still confused, there are many freely available references describing the PST.

p 234 | 19 Again, the references explain the particle tracking method (with pictures) in detail. Given that we now have 11 Figures, we suggest pictures of a method that has been well documented and vetted are extraneous.

p 235 | 20 beta? There is a “b” for width in Equation 1, which is shown in Fig 2.

p 239 | 7 added sentence on constant weak layer thickness.

p 248 Fig 1, changed to “infinite”

p 257, Fig 10, added clarification.