Dear Editor,

Thank you for your continued feedback concerning our manuscript, npg-2020-26

We greatly appreciate the time and effort by you and the referees.

We have worked to address each of the concerns. We believe that all the suggestions have been excellent and that adjusting for these as best we could, that the improved manuscript should be ready for final acceptance. We hope the editor agrees.

Sincerely,
Erik Bollt,
Abd Al Rahman Al Momani

Enumerated, the changes were,

1) English. We have carefully worked through the entire manuscript from title, and abstract, through to the conclusions. We have made extensive minor adjustments throughout. So many, that the relevance of coloring in blue every change looses relevance. I am sure if you read any part, you will now find that the text is cleaner and smoother we hope. We have colored more central changes, especially including the title, the abstract, and in the conclusion, but this is not meant to be exclusive to the many other changes.
2) We have now changed the title and abstract as suggested.

Title: An Early Warning Sign of Critical Transition in the Antarctic Ice Sheet - A Data Driven Tool for Spatiotemporal Tipping Point

Abstract: Our recently developed tool, called Directed Affinity Segmentation was originally designed for data-driven discovery of coherent sets in fluidic systems. Here we interpret that it can also be used to indicate early warning signs of critical transitions in ice shelves, as seen from remote sensing data. We apply a directed spectral clustering methodology, including an asymmetric affinity matrix and the associated directed graph Laplacian, to reprocess the ice velocity data and remote sensing satellite images of the Larsen C ice shelf. Our tool has enabled the simulated prediction of historical events from historical data, fault lines responsible for the critical transitions leading to the breakup of the Larsen C ice shelf crack, which resulted in the A68 iceberg. Such benchmarking of methods using data from the past to forecast events that are now also in the past is sometimes called post-casting, analogous to forecasting into the future. Our method indicated the coming crisis months before the actual occurrence.

3) We have specifically altered the language to weaken the overly strong claim pointed out by the referee, and several others. See the new text colored in blue, lines 226-227:

It is interesting to contrast our directed partitioning   results, which give early indications of impending fracture changes using the remote sensing satellite images, to classical interferometry analysis methods Scambos et.al. (1996).