Landfast sea ice material properties derived from ice bridge simulations using the Maxwell Elasto-Brittle rheology

The manuscript describes an implementation of the MEB rheology in the Mcgill finite Difference framework. It describes an idealized test case that is close to real cases of the Canadian Arctic Archipelago. The manuscript describes how ice arches are formed and breaks down, how the damage and stress fields are formed and evolves. The article is in general well written and with a few minor changes it should be ready for publication.

The main concern of the model is artifacts in the damage fields that are referred to as the numerical issues. I don't think that this is a show stopper for the manuscript but it is an issue that needs to be addressed in order to properly utilize the model. One concern is whether this influences the results described in this manuscript.

Minor changes

Line 45 would leave out "constituting the cornerstone". I agree that the damage parameter is important but I (this is a personal opinion) don't think that it is necessary to put this in.

Line 62-66 I think that this is more a conclusion than an introduction part and it should be left out. This wrap up of conclusions are already

Line 281 I was a little confused by the (a,A,d) parenthesis. Maybe just use "With nx center points of in the x direction…

Line 334 I assume that it is figure 7a that is referred to. Please add the correct subfigure as well as the figure number

Line 399 ice arche, typo