Interactive comment on "Accuracy and Inter-Analyst Agreement of Visually Estimated Sea Ice Concentrations in Canadian Ice Service Ice Charts" *by* Angela Cheng et al.

Anonymous Referee #1

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This paper assesses the accuracy of CIS products and the agreement between analysts in the generation of the CIS ice charts. This type of study is relevant to the field of sea ice mapping since CIS charts can be used as training/validation data for developing automated methods. Thus, it is important to assess the accuracy of these products and understand how they are generated, their strengths and weaknesses.

This paper presents good statistical analyses of the gathered information and is a good start to assess the accuracy of CIS charts. Nonetheless, I would recommend more caution in the discussions section since with more analysts, there could be more of them that disagree with the general consensus than just one out of eight.

Also, does the methodology implemented here reflect how the CIS products are generated? Since CIS offers daily products, they surely refer to previous day analysis to determine ice concentration. This would greatly impact the general agreement between analysts. This should be discussed in section 8.

Another analysis that I think should be added to this study, and the authors partially addressed it in section 8, is how the agreements vary with ice types and not only ice concentrations. Ice type is also a significant variable for shipping and weather/climatology modeling. I suggest adding details in section 3 about the distribution of ice concentrations and ice types for all the different polygon to show how this study reflects the ice conditions seen in Canadian waters.

I think in a future study, the authors should look at how MAGIC compares to CIS charts generated operationally to assess the agreement between both products with a higher statistical significance than just imagery with high contrast. The authors should elaborate a bit more in the discussion section how MAGIC performs in low contrast or different ice conditions and how this could impact results of this study.

That being said, I recommend that this paper should be published after revisions by the authors since it brings important information about the CIS charts to the science community.

Specific Comments:

P.4L.10: add "(floe size)" after "predominant form (F) of ice" to clarify P.16L.33: I imagine that 7/10 is considered 1/10 overestimation in this case? Please clarify.