

Interactive comment on “A climate index for the Newfoundland and Labrador shelf” by Frédéric Cyr and Peter S. Galbraith

Anonymous Referee #3

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This study introduces a new index to represent environmental conditions of the Newfoundland and Labrador Shelf. The new index is based on 10 subindices. Having an useful index that can well depict variations of the environmental conditions is always useful and needed. The paper is well written, but I do have some questions.

(1) The winter NAO index is generally believed to have significant impacts on the hydrology in the subpolar region, but the correlations shown in Figure 13 suggest that the NAO does not strongly contribute to the variations of the other 9 subindices. I would tend to suggest the authors provide some explanation for this.

(2) Salinity from S27 appears not to be a good index to use for representing the environmental conditions of the investigated shelf waters (Figure 13). Considering the location of the station which is close to coast (by visual judgement), other factors may

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have contributed to its variability rather than environmental condition changes in the shelf waters as a whole. If this subindice is removed in the calculation for the new climate index, can the performance of the new index be improved?

(3) The S27 temperature and S27 CIL have a strong correlation, which is expected. They are not really independent with each other. I am not sure how this dependency can affect this new climate index. Can the authors address this issue?

(4) Since this new climate index is intended to replace the CEI by Petrie et al. (2007), it would be helpful if the authors can provide some details about this CEI in the manuscript, which can make the paper complete.

Some detailed comments (1) Line 215 “more stable that” should be “more stable than”
The paper is well written, but I would suggest the authors should pay attention to possible typos.

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