Interactive comment on "The Sub-Polar Gyre Index – a community data set for application in fisheries and environment research" *by* Barbara Berx and Mark R. Payne

Anonymous Referee #3

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In my opinion, the manuscript is suitable for ESSD but some revisions are needed, according to what listed below, to improve it before publication.

GENERAL COMMENTS Berx and Payne present a very interesting dataset of the North Atlantic sub-polar gyre index (SPG-1) and give a useful description of how it is computed from publically available SSH products. This index has been already used and described in several papers; nonetheless, it needs to be routinely updated - because of the effects of the lengthening time series (as shown here by the authors). Thus a major advantage could be achieved if the authors will provide regularly updates of the SPG dataset; it would be worthy to understand if the authors have any commitment/intention to do that and which is the expected timing (i.e., following SSH delayed

time products release, using near-real-time products, . . .).

Data can be easily downloaded in ASCII format and a preview tool is included in the main page to facilitate the users. No doubt that this freely available dataset could limit mistakes and uncertainties for those not used to manage altimeter data and/or principal component and empirical orthogonal analyses.

The short manuscript that comes with the index estimations is carefully written and also provides i) a useful analysis of their sensitivity to the spatial extent of the area of computation and to the length of the considered time series, ii) a comparison with index values derived in previous studies. Finally, seven appropriate figures support these analyses.

SPECIFIC COMMENTS In the abstract, I am wondering why the authors say that the sensitivity to timeseries length is not an important factor; actually it is (to me) even though it does not affect this dataset. The authors discuss this aspect later in the manuscript (section 3.2) but again it is not completely clear if timeseries length represent an issue to be carefully considered or not. This aspect should be clarified and, eventually, the sentence in the abstract should be rephrased.

In the Introduction, it would be worthy to include information about similarities and differences with the NAO index and, possibly, their combined use. Still, although the fact that this index version is better than the previous ones is clearly highlighted, the manuscript lacks an explicit description of what this index can be used for. Suggestions about how fisheries could apply this SPG index could benefit the readers and improve the use of this dataset in future studies.

In Section 3, it would be interesting to know something more about the second/third modes (how much variance they explain, what they could represent) and/or why we can neglect them when studying SPG. Generally, I would also appreciate more details about the first mode of the EOF and its physical interpretation in the SPG context.

In Figure 7, I don't think that all data shown represent "yearly mean" values as described in the figure label. Please clarify.

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