

## ***Interactive comment on “Upper Labrador Sea Water in the Irminger Sea during a weak convection period (2002–2006)” by E. Louarn et al.***

**Anonymous Referee #1**

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This paper addresses the variability in the location and properties of upper Labrador Sea Water from hydrographic and tracer data collected in the Irminger Sea from 2002–2006.

My main concern with the paper is that it does not answer any specific question. Mostly, it seems to document that different ‘lenses’ of uLSW observed in the Irminger Sea have slightly different properties suggesting a mixture of local and remote formation sites including the Labrador Sea, the Irminger Sea and the region south of the tip of Greenland. While I find that the tracer data (e.g. oxygen, CFCs) add interestingly to the story of different formation sites – I could not find any really new result in the paper. All of the proposed formation sites have, as described by the authors, already been identified and the fact that the formation is characterized by a large degree of

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spatial and temporal variability has also been discussed in the many papers referenced by the authors. This is made clear by the authors themselves in the abstract which summarizes the results as: ‘The uLSW shows complex and time variable patterns reflecting different formation sites: Irminger Sea, South Greenland and the Labrador Sea.’

It seems to me that the authors have conducted an interesting analysis of the various water properties of different uLSW sources – however the paper as it stands now is mostly a list of these properties with somewhat speculative conclusions about what they indicate. It is very descriptive in nature but, above all, it lacks a focus – What is the question answered and why is it important? As for the various questions it appears to answer – identifying different formation regions and timing – it seems to me that the paper lacks an in-depth analysis that supports any of the conclusions reached (which again do not seem new to me). The addition of the Argo float data, again, is not really conclusive since – as stated by the authors – the fact that Argo floats did not sample deep mixed layers does not mean that the deep mixed layers were not there.

Since the paper does not really present new results that can justify a new manuscript, I do not believe this paper should be published in this online journal. I suggest that the authors identify one or several specific questions which have not been previously addressed and that they focus on complementing what they find in the hydrographic data with a more in-depth analysis pertinent to that question.

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