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Ocean Science
Discussions

Interactive comment on "How well can we derive Global Ocean Indicators from Argo data?" *by* K. von Schuckmann and P.-Y. Le Traon

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Dear Karina von Schuckmann and Pierre-Yves Le Traon,

Thank you for your kind explanation.

As the figure shows residual seasonal variation, I was under the impression that only the average annual climatology value was subtracted.

With your explanation, the result seems to me very interesting.

In the approximate figure below, I plot WOA05 result from the middle panel of the Fig 2 in the manuscript after a subtraction of the linear trend (blue line).

The result is periodic, and I approximately estimate the phase by superimposing a

cosine curve (brown). It is close to 260 degrees, which is around the expected value for the Northern Hemisphere.

Finally, I add recent values for OHC evaluated from the Argo dataset from Scripps Oceanographic Institution (http://www.argo.ucsd.edu/Gridded_Fields.html) as a red dashed line. The phase is opposite and the amplitude is not much larger, at most a factor of two.

The conclusion is that the seasonal variation of the climatology significantly overestimates the more recent variations shown in the middle panel used in Fig. 2. This results in a variation with the opposite phase and a substantial magnitude.

Why should this happen? Is it likely that the more rapid warming of the Northern Hemisphere increases the component that is in phase with the boreal seasons, thus weakening the global average seasonal signal?

Thank you very much for this and earlier interesting articles.

With kind regards, Stjepan Marčelja

Interactive comment on Ocean Sci. Discuss., 8, 999, 2011.

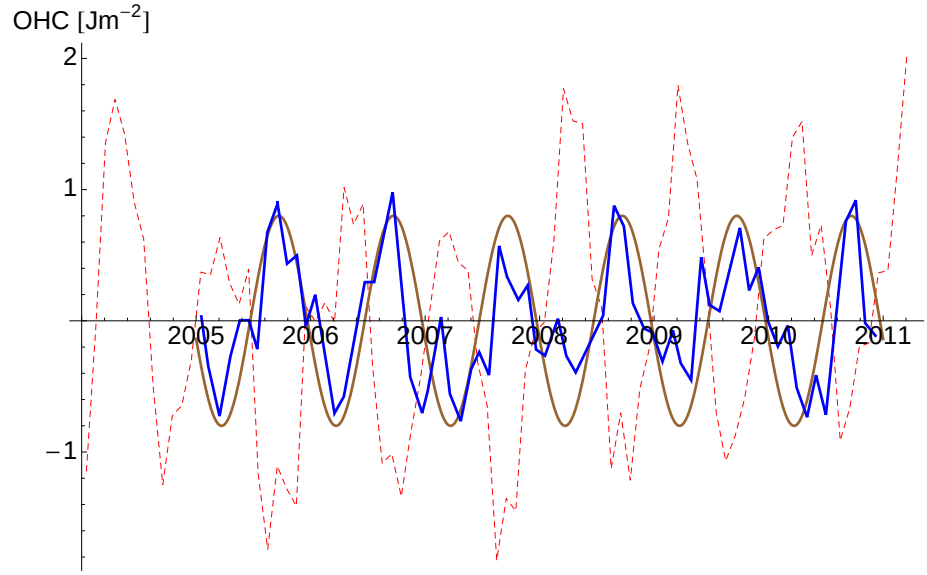

Fig. 1.