

Interactive comment on “Spatial scales of temperature and salinity variability estimated from Argo observations” by F. Ninove et al.

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Dear Yuri,

We will indeed cite your paper which we were not aware of (thanks for informing us). Here is a brief answer to your questions :

1/ we do not simulate fields on a sphere but on a longitude/latitude plan

2/ $1/1+E$ term. The observed fields include noise in addition to true signal. The "observed variance" computed from observations is thus equal to VAR (true variance) + E (noise). Since we are working on correlation, we have normalized all covariance values by VAR + E (VAR is not known). This is why we need to include this term when fitting our model.

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3/ Although our results are broadly consistent (in qualitative sense) with yours, your scales appear much larger. This may be due indeed to the differences in data sets (you are using a much more limited number of Argo profiles), the removal of biases in the Levitus climatology (we do it in our calculation) and the adjustment of a covariance model taking into account noise level.

We have added the following text in our paper in section 4.

"A similar calculation was done by Resnyanskii et al. (2010) but with a more limited Argo data set (2005-2007). Our results are in a qualitative agreement with theirs although they found larger scales. This may be due to the differences in data sets but also to differences in the way spatial scales were computed. They did not remove, in particular, biases in the Levitus climatology and did not adjust a covariance model taking into account noise level."

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