

Interactive comment on “Assessment of the impact of TS assimilation from ARGO floats in the Mediterranean Sea” by A. Griffa et al.

Anonymous Referee #1

Received and published: 18 July 2006

General comments: I have reviewed the paper “Assessment of the impact of TS assimilation from ARGO floats in the Mediterranean Sea” by A. Griffa et al. This paper investigates quantitatively the impact of assimilating Temperature and Salinity profiles from Argo floats in the Mediterranean Sea using numerical simulations and a reduced-order multivariate Optimal Interpolation scheme for assimilation.

The paper is well written and well organized. The objectives are clear, the results novel and their interpretation contributes efficiently to the advancement of operational oceanography, in particular it intends to contribute to future planning of sampling strategies for the Mediterranean sea.

Specific comments: In preparing the final version of the manuscript, the authors should

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

take the following comments into consideration and clarify a number of minor points below:

- The methodology followed by the authors has not been described exhaustively in this work but they give enough relevant and accessible references for a detailed description of the approach followed .

They mention that data error covariance radius is 10-6 km and the e-folding time is 10-6 days, but they do not mention the correlation model considered.

What kind of correlation model are they assuming?

Have the authors verified the sensitivity of results to the spatial and temporal correlation scales chosen?

- More generally, the results presented in this work are based on a particular configuration of the MOM model, with a particular forcing etc. Although the authors mention (in the summary and conclusion section) that aspects as model errors, bias, forcing, etc are not considered in this paper, these factors could be critical for the results.

Have the authors evaluated the impact of such factors on the methodology procedure?

How does it validate\invalidate the results and conclusions?

- Fig 3. Relative errors versus time in days. It is clear that the assimilation is successful in all cases, according to the authors “especially marked during the first two assimilation cycles”. Why is not so clear (during the first two assimilation cycles) for salinity variable in winter (at the Eastern basin)?.

Minor corrections:

Page 673, line 8: Replace ‘communicate’ by ‘communicate’.

Page 673, line 9: Replace: ‘In particular’ by ‘In particular’.

Page 682, line 4: Replace ‘Est’ by ‘East’ and ‘eddie’ by ‘eddy’.

Page 686, line 23: Replace 'sampling criterium' by 'sampling criteria'.

Interactive comment on Ocean Sci. Discuss., 3, 671, 2006.

OSD

3, S197–S199, 2006

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

S199

EGU