

Interactive comment on “Major improvement of altimetry sea level estimations using pressure derived corrections based on ERA-interim atmospheric reanalysis” by L. Carrere et al.

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Received and published: 1 March 2016

General comments: The authors claimed a major progress with a diminution of the along-track SSH error of about 2-3 cm globally and even more than 3 cm at high latitudes and in shallow waters by using the new DAC_ERA correction. This is a notable progress for short-term and/or high frequent ocean dynamics, especially for the ocean mesoscale eddies. It could be accepted for publication after some major reversions.

Specific comments: The major progress is only mentioned in conclusion, but in the abstract. The abstract is vague in addressing their main improvements and contributions. The authors may want to summarize their results and make some more comprehensive conclusions.

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There are too many abbreviations, which should be explained at the first time. The authors may also want to list them in a table. The authors must attempt to present their work in a logical fashion.

Pg 6, line 29 what are the “trends”, are they really become “more accurate”? The authors addressed long-term trends in section 5, where “results indicate that the impact on MSL trend is negligible at a global scale”.

Pg 7, section 3.1.2, The authors may want give the formula of DAC correction.

Pg12, section 6, Can the authors make some comments on the feature progress on the short-term SLA products, given high resolution of ERA-based atmospheric reanalysis and altimeter missions?

Some examples are:

Pg 1, ERA-interim (Line 1, Line 12) or ERA-Interim (line 14) ?

Pg 2, Line 24, what the “IB” is? I find the answer at Pg 5, line 31!

Pg 3, Line 29 and Pg 5, line 6-7. The definition of SLA should be more consistent.

Pg 4, Line 29, the high-frequency part -> the high-frequency (noted HF)

Pg 5, Line 13, mean sea level (MSL)-> MSL

Pg 5, Line 23, The high frequency (noted HF) -> The HF...

Pg 5, line 25 TP (e.g. Pg 4, L17) or T/P (e.g. Pg 5, L25) ? Similar for “J1 and Jason-1”, “J2 and Jason-2”, “DAC-ECMWF” -> “DAC_ECMWF”

Pg 9, line 10, 1996-1992 -> 1992-1996

Pg 10, line 16, 5-2 cm² -> 2-5 cm²

Tables, The title of table should be above on the table.

Table 2, “ECMWF - DAC-ERA” should be “ECMWF – DAC_ERA”, and similar for “DT-

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ERA”.

Figure 2, where S1 and S2 respectively represents the diurnal and semi-diurnal atmospheric tides.

Figure 3, “Left and right” should be “above and bellow”. “temporal” ->“Temporal”.

Figure 4, “statistics” ->“Statistics”.

Figure 5, “temporal” ->“Temporal”.

The references should be reedited. I find that the information (e.g., pages, paper id) in references is incomplete.

Interactive comment on Ocean Sci. Discuss., doi:10.5194/os-2015-112, 2016.

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