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Ocean Science
Discussions

Interactive comment on "DUACS DT-2018: 25 years of reprocessed sea level altimeter products" *by* Guillaume Taburet et al.

Anonymous Referee #3

Received and published: 26 March 2019

General Comment :

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The manuscript presents the overall enhancement of gridded and along-track altimetry products following the DT2018 reprocessing, in a way that is similar to the DT2014 reassessment published earlier. Methods and Processing for quality assessment are therefore established, and skill assessment has not been developped further, but this is acceptable to me. I believe it is a necessary step to publish such reassesment peridodically, and to synthetize skill metrics for the state-of-the-art altimetry products as proposed. I therefore support the publication of this manuscript, suggesting some modifications below. Title is appropiate.

* As a suggestion : I believe the whole manuscript could be summarized on a single figure, in the form of a target or taylor diagram showing skill metrics for the different products (along-track, gridded SLA, gesotrophic currents) and scales (regional, global coastal, global offshore, climatic, etc ..) showing DT2014 postions and DT2018 positions. This is a mere suggestion, but I think it would provide a very efficient overview of the DT2018 update. Unless there are good justifications why this can not be done (at least for part of the datasets presented), I think it would be relevant for the manuscript to consider issuing this figure.

Specific Comments (I start with question mark "?" to denote a suggestion)

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* Abstract: P1L19 : I understand the reason for providing quantitative metrics in the abstract, but the term "errors" is too vague in the present abstract. Please precise.

* Text :

P3L5-6 :? recommendationS, correctionS

P3L33: "in Deep Ocean" -> "in the deep ocean".

P4L18 : It would ease the read to define "geoditic" and "drifting" mission, and help non-specialized readers to grasp the challenges of altimetry processing.

P4L23 : please define more clearly the "percentage of data recovery"

P5l20 : complete: differences of ...

P5l29 "law-pass" -> "low-pass"

P6L6:7: ? consider Capet et al. 2014 that adressed those issue for DT2014.

P6L9 : Does "selection" applies on 1) altimeter data for along-track data product generation or 2) along-track product for gridded products generation ?

P6L14:15 vs P6L20:21 : There seems to be apparent contradictions here, please

rephrase for clarity (".. unchanged for global and Black Sea, wrt to DT2014" VS "BlackSea paramters are NOW similar to global, except for scales ... ".

P6L27: correct "Different parameters leadS"

P7L30: There is a problem in the sentence "This ... variance". Even after displacing "the", the meaning is not clear, please clarify.

P8L4: precise the sign of the 100-200 cm^2 difference of variance (but I think it's both plus and minus).

P8L17 : rephrase "less peaky"

P8L22 : could you explain why only th period 2003-2004 can be considered for this assessment ?

P8L23: The author avoided the nomenclature "two-sat"/"all-sat" up to this point. Can it be also avoided here ? (I think it is the only place where it is used).

P9L8 : ? is it "COvariance and RMS" ?

P9L10 : "altimeter maps" -> "geostrophic current maps"

P9L12 : lowercase "Variance"

P9L20 "points" -> "data points"

P9L20/22 : rephrase "We gain all points".

P9L26 "in the" repeated

P10L4 : Why "maximum" correlation ? Does that refer to a selection amongst the neighboring pixels ?

p10L26 : "a measurementS"

P11L3, remove "." after "yr" (2x).

P11L18 "For" -> "for"

P11L26:28 Why is there no TG validation for the Black Sea ? Explain.

P12L14 "large" -> "largeR"

p12l22 "lager" -> "larger"

P13L8 "for" -> "from"

P13L26 Biblio ref for eddy tracking, instead of html ?

* Figures & Tables :

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* Are appropriated and all useful in general.

* Small to very small coordinates, axes and colorbar title. Please ensure readability.

Fig 1: What determines the end of the bars for the future ? scheduled lifetime ? please precise.

Fig 2: Probably the less useful figure. If considered essential, should the figgure be re-processed with larger bins ? It does not provides many information as for now, except : "more data in the 20km coastal band", "lot of noise in the center" and " a strange, un-commented blue track in the center of East Med". Unless justified otherwise, i suggest to remove this figure.

Fig 3,: caption : rephrase "Loss ones".

Fig 6. Second half of the caption ("Difference of the variance ... ". Does not correspond to the figure (eg. refers to negative values). -> ? missing panel ?

Fig 9: Caption mentions histograms that are not visible on the figure.

Fig 10 : use divergent colormap for the panel f,g,h (eg. blue-white-red)

* References :

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* There are many references to work 'in prep.', including on to "In prep. to be submitted to OD in 2016" (Lyard et al.) . Please check with editorial office on the policy as regards reference to unpublished works.

* The reference style is not homogeneous, with years being given some times at the end, some times after the authors. Please homogenize.

* There are (many) reference works not provided in the bibliography (eg. Valladeau et al, 201 ; Le Traon et al, 1998, Ducet et al 2000, Le Traon & Ogor 1998 ; Le Traon et al, 2003 ; Lumpkin et al. 2013 ; Taylor, 2001 ; Watson et al, 2015 ; Beckley et al , 2017 ; Dieng et al 2017; Ballarota, in prep ; d'Ovidio 2015.)

* Similarly there are (many) references in the biblio that are not mentionned in the text. I do not think it is my duty to revise this for you extensively. Please check carefully.

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