



ESA Sea level CCI

Quarterly progress report: Q1 2014

Reference: CLS-DOS-NT-14-046

Nomenclature: SLCCI-QPR-008

Issue: 1. 1

Date: March 17th 2014





Chronology Issues:			
Issue:	Date:	Reason for change:	Author
1.0	12/03/2014	First Issue	JF Legeais
1.1	17/03/2014	Correction of document ID (nomenclature) setting	G Timms

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1. Team evolution

The existing SL CCI consortium, in place for phase 1, has been maintained for phase 2 of the project with the addition of one partner, the Plymouth Marine Laboratory (PML). Jean-François Legeais (CLS) will replace Yannice Faugere (CLS) in the project management team with the support of Gary Timms (CGI). Benoît Meyssignac (LEGOS) is identified to support the science leader (Anny Cazenave).

2. Kick off and objectives for phase 2

2.1. Review of user requirements

The User requirements collected in phase 1 and which represent the target for the SL ECV products' accuracy will be refined at the beginning of phase 2. In particular, specific requirements for the Arctic region and coastal areas will be produced.

2.2. New algorithms

We will focus on the improvement of the altimeter algorithms presenting the most important sources of errors with respect to the climate scales (user requirements): orbit solutions, altimeter instrumental corrections, wet troposphere and atmospheric corrections. New sea level and Mean Sea Surface estimations are planned in the Arctic region and also improvements in coastal areas. In addition, the reprocessing of altimeter level 2 products from external projects (ERS-1 & 2, Envisat and possibly TOPEX/Poséidon and Jason-1) will be included in this work.

2.3. Future activities

The following activities are planned for the next three months:

- Transfer the website hosting from CLS to CGI
- Refine user requirements
- Communication: initiate a publication on the global SL CCI project, advertising the V1.1 products and their availability, and preparation of the next newsletter
- Begin the technical development activities with the Earth Observation team (WP2)
- Prepare the first product extension (database update)

3. Project outreach and promotion of datasets

The evolution of the project (transition to phase 2) and the availability of the V1.1 products will be published on the website (together with an email to the V1.0 users), along with more details about the team (including publications). We are preparing the next newsletter and are preparing our participation to the EGU, COSPAR, EUMETSAT and OSTST conferences in 2014. Some publications are on-going, a specific one on the SL CCI project has been initiated and a DOI will be associated with the products.

4. List of peer-reviewed publications

A list of peer-reviewed publications of the SL CCI team from 2013 is included below. Publications already listed in the last QPR are not included.



Note that a global list of peer-reviewed publications and other communications of the SL CCI team since 2011 is available in a dedicated document which will be available on the SL CCI website.

2013 Publications

Balmaseda, M. A., Mogensen, K. and Weaver, A. T. (2013), Evaluation of the ECMWF ocean reanalysis system ORAS4. *Q.J.R. Meteorol. Soc.*, 139: 1132–1161. doi: 10.1002/qj.2063

Balmaseda, M. A., K. E. Trenberth, and E. Källén (2013), Distinctive climate signals in reanalysis of global ocean heat content, *Geophys. Res. Lett.*, 40, 1754–1759, doi:10.1002/grl.50382.

Cazenave A. and Le Cozannet G., Sea level rise and coastal impacts, in press, *Earth's future*, 2013.

Dobslaw, H., Flechtner, F., Bergmann-Wolf, I., Dahle, C., Dill, R., Esselborn, S., Sasgen, I., Thomas, M. (2013): Simulating high-frequency atmosphere-ocean mass variability for de-aliasing of satellite gravity observations: AOD1B RL05. - *Journal of Geophysical Research*, 118, 7, 3704-3711. DOI:10.1002/jgrc.20271.

Dieng H.B., Henry O., Messignac B., Cazenave A., von Schuckmann K. and Lemoine J.M., Effect of La Nina on the global mean sea level and North Pacific ocean mass over 2005-2011, submitted, *J. Geodetic Sciences*, 2013.

Fernandes, M.J.; Nunes, A.L.; Lázaro, C. Analysis and Inter-Calibration of Wet Path Delay Datasets to Compute the Wet Tropospheric Correction for CryoSat-2 over Ocean. *Remote Sens.* 2013, 5, 4977-5005.

Fernandes, M.J., N. Pires, C. Lázaro, A.L. Nunes, 2013. Tropospheric Delays from GNSS for Application in Coastal Altimetry. *Advances in Space Research* Vol. 51(8).DOI: 10.1016/j.asr.2012.04.025.

Hollmann, R., and Coauthors, 2013: The ESA Climate Change Initiative: Satellite Data Records for Essential Climate Variables. *Bull. Amer. Meteor. Soc.*, 94, 1541–1552. doi: 10.1175/BAMS-D-11-00254.1

Meysignac B., D. Salas y Melia and A. Cazenave. (2013) Anthropogenic forcing fingerprint on the observed tropical Pacific sea level trends from the CMIP5 simulations of the 21st century. *Clivar Exchanges* No. 62 (Vol 18 No.2) August 2013.

Peng D., Palanisamy H., Cazenave A., Meysignac B. (2013). Sea level change and variability in the South China Sea, in press, *Marine Geodesy*. doi: 101080/01490419.2013.771595.

Rudenko, S., Dettmering, D., Esselborn, S., Schöne, T., Förste, C., Lemoine, J.-M., Ablain, M., Alexandre, D., Neumayer, K.-H.: Influence of time variable geopotential models on precise orbits of altimetry satellites, global and regional mean sea level trends, "Advances in Space Research", 2013, under review.

Rudenko, S., Schön, N., Uhlemann, M., Gendt, G. (2013): Reprocessed height time series for GPS stations. - *Solid Earth*, 4, 1, 23-41, DOI:10.5194/se-4-23-2013.

Stammer D., Cazenave A., Ponte R. and Tamisiea M., Contemporary regional sea level changes, *Annual Review Marine Sciences*, 5, 21–46, 2013.

2014 Publications

Cazenave A., Dieng H.B., Meysignac B., von Schuckmann K. Decharme B. and Berthier E., The rate of sea level rise. *Nature Climate Change*, 2013, DOI: 10.1038/NCLIMATE2159.



Henry O., Ablain M., Meyssignac B., Cazenave A., Masters D., Nerem S., Leuliette E. and Garric G., Investigating and reducing differences between the satellite altimetry-based global mean sea level time series provided by different processing groups, in revision, *J. of Geodesy*, 2014.

J. A. Johannessen, R. P. Raj, J. E. Ø. Nilsen, T. Pripp, P. Knudsen, F. Counillon, D. Stammer, L. Bertino, O. B. Andersen, N. Serra and N. Koldunov (2014) Toward Improved Estimation of the Dynamic Topography and Ocean Circulation in the High Latitude and Arctic Ocean: The Importance of GOCE, *Survey in Geophysics*, Springer, DOI 10.1007/s10712-013-9270-y.

Palanisamy H., Cazenave A., Meyssignac B., Soudarin L., Woppelmann G. and M. Becker, Regional sea level variability, total relative sea level rise and its impacts on islands and coastal zones of Indian Ocean over the last sixty years, *Global Planetary Change*, 2013,doi: 10.1016/j.gloplacha.2014.02.0001.