

Project title: Merging GRACE and GRACE-FO Ocean Bottom Pressure Anomalies Using Available Pressure Records and the Atmosphere – OBP relationships from existing GRACE data.

Datasets provided: [PredictedGlobalOBP.mat](#)

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Data Description:

This file contains a field of monthly, gap-free, ocean bottom pressure variability from January 2000 to August 2020 (248 months). Its purpose is to help merge GRACE and GRACE-FO ocean bottom pressure observations in the global oceans. Please note that this OBP field has the long-term trend and the mean monthly climatology removed. Note too that in this 'global' prediction, the Arctic Ocean is excluded.

The dataset is provided in the form of a Matlab structure array, which includes the following variables:

- **Latitude** (grid size = 360 x 720, following publicly-available JPL mascon GRACE and GRACE-FO data [Wiese *et al.*, 2019]).
- **Longitude** (grid size = 360 x 720, as per Latitude).
- **Dates** (vector size = 248 x 1) (as per Matlab datenum function)
- **Year** (vector size = 248 x 1)
- **Month** (vector size = 248 x 1)
- **OBP** (vector size = 360 x 720 x 248)
- **OBPunits** (a string 'cm of water equivalent')
- **LastUpdated** (a string with the date the file was last updated)

The data was created using a combination of statistical techniques, including Empirical Orthogonal Functions, Maximum Covariance Analysis and simple linear regression models, applied on GRACE OBP (JPL mascons Release 6 [Wiese *et al.*, 2019]) exclusively from 2002 to 2012, and sea level pressure (SLP) from NCEP reanalysis data [Kalnay *et al.*, 1996] from January 2000 to August 2020. In a nutshell, this predicted OBP provides the variability of OBP directly associated with the variability in SLP. A reference to the peer-reviewed manuscript which will include the analysis and discussion related to this dataset will soon be provided here.

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Questions? Contact: Cecilia Peralta-Ferriz, ferriz@uw.edu

References:

- Kalnay, E., and co-authors (1996), The NCEP/NCAR 40-Year Reanalysis Project. *Bull. Amer. Meteor. Soc.*, 77, 437–471.
- Wiese, D. N., D.-N. Yuan, C. Boening, F. W. Landerer, M. M. Watkins (2019), JPL GRACE and GRACE-FO Mascon Ocean, Ice, and Hydrology Equivalent Water Height Coastal Resolution Improvement (CRI) Filtered Release 06 Version 02. Ver. 02. PO.DAAC, CA, USA. Dataset accessed [2020-06-18] at <https://doi.org/10.5067/TEMSC-3JC62>.