ECCO Version 4 Release 2 **[https://dataverse.harvard.edu/dataverse/ECCOv4r2]** **[doi:10.7910/DVN/WJNXU3]**

- This dataset (http://dx.doi.org/10.7910/DVN/WJNXU3) provides the 'ECCO version 4, release 2' ocean state estimate and collocated observations (see below for details) for remotely sensed variables:

sealevel.????.nc	Sea Level Anomaly
sst.????.nc	Sea Surface Temperature
sic.????.nc	Sea Ice Cover

- List of variables in sealevel.????.nc:

ssh_ECCOv4r2 :	"Sea Surface Height (ECCO version 4 release 2)"
lsc_misfit	"Time variable model-data misfit: large scale component"
tp_misfit	"Time variable model-data misfit: TOPEX family altimetry"
ers_misfit	"Time variable model-data misfit: ERS family altimetry"
gfo_misfit	"Time variable model-data misfit: GFO family altimetry"
lsc_sla	"Time variable sea level anomaly: large scale component"
tp_sla	"Time variable sea level anomaly: TOPEX family altimetry"
ers_sla	"Time variable sea level anomaly: ERS family altimetry"
gfo_sla	"Time variable sea level anomaly: GFO family altimetry"

- List of variables in sst.????.nc:

sst_ECCOv4r2	"Sea Surface Temperature (ECCO version 4 release 2)"
sst_misfit	"Sea Surface Temperature Misfit (ECCO v4r2 minus Reynolds)"

- List of variables in sic.????.nc:

sic_ECCOv4r2	"Sea Ice Cover (ECCO version 4 release 2)"
sic_misfit	"Sea Ice Cover misfit (ECCO v4r2 minus NSIDC)"

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- Comments:

- 'ECCO Version 4 Release 2' is a global ocean state estimate that covers the period from 1992 to 2011 (Forget et al. 2015, 2016). It was produced on behalf of the ECCO consortium (http://ecco-group.org/) with major support provided NASA's Physical Oceanography Program. General documentation of the 'ECCO Version 4 Release 2' dataverse and all included datasets can be found at https://dx.doi.org/10.7910/DVN/ODM2IQ (see README.pdf in that dataset).
- Global state estimate fields are provided on the native LLC90 grid in nctiles format (see Forget et al 2015). Each global field included in this dataset is thus distributed over 52 netcdf files that each contain one 45x45 subdomain of the LLC90 grid (see nctiles45x45.jpg @ https://dx.doi.org/10.7910/DVN/ODM2IQ for a depiction).
- Individual files can be read directly in any netcdf enabled software (http://www.unidata.ucar.edu/software/netcdf/software.html) such as http://www.giss.nasa.gov/tools/panoply/ or Matlab. Their 69°S to 56°N sector, which follows a simple `lat-lon' grid, can be extracted using eccov4_lonlat.m (https://dx.doi.org/10.7910/DVN/ODM2IQ). Global fields can also be manipulated or interpolated to any other grid using the gcmfaces toolbox (see ECCOV4R2_gcmfaces.pdf @ https://dx.doi.org/10.7910/DVN/ODM2IQ).
- The formatting, online publishing, and archiving of the ECCO V4 R2 dataverse and datasets have benefited from guidance that was graciously provided by the MIT Libraries Data Management Services (http://libraries.mit.edu/data-management/). At time of writing the contents listed above can alternatively be downloaded from ftp://mit.ecco-group.org/ecco_for_las/version_4/release2/

- References:

- Forget, G., J.-M. Campin, P. Heimbach, C. N. Hill, R. M. Ponte, and C. Wunsch, 2015: ECCO version 4: an integrated framework for non-linear inverse modeling and global ocean state estimation. Geoscientific Model Development, 8, 3071-3104, http://dx.doi.org/10.5194/gmd-8-3071-2015
- Forget, G., J.-M. Campin, P. Heimbach, C. N. Hill, R. M. Ponte, and C. Wunsch, 2016: ECCO Version 4: Second Release, http://hdl.handle.net/1721.1/102062

- Software:

- The ECCO V4 R2 files were produced using the 'checkpoint64u' versions of the general circulation model (MITgcm and ECCO v4 settings) and Matlab analysis toolboxes (gcmfaces and MITprof). These software versions are available at http://mitgcm.org/download/other_checkpoints/ and http://mit.ecco-group.org/opendap/ecco_for_las/version_4/checkpoints/contents.html
- The up to date software documentations are available at http://mitgcm.org/public/r2_manual/latest/online_documents/manual.pdf, http://mitgcm.org/viewvc/*checkout*/MITgcm/MITgcm_contrib/gael/verification/eccov4.pdf, and http://mitgcm.org/viewvc/*checkout*/MITgcm/MITgcm_contrib/gael/matlab_class/gcmfaces.pdf

- Contact Us:

- questions regarding the ECCO model set-up, grid, software, or files should be addressed to either ecco-support@mit.edu (please subscribe via http://mailman.mit.edu/mailman/listinfo/ecco-support) or mitgcm-support@mitgcm.org more generally (please subscribe via http://mitgcm.org/mailman/listinfo/mitgcm-support).

- README file revision history:

- README file overhaul for use within dataverse [Gael Forget] [2016/08/03]