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## 1 List of identified variables

GPP  
NEE  
LAI  
FAPAR  
Biomass  
Tree height  
Evapotranspiration  
Surface temperature  
Albedo  
Snow depth  
Snow extent  
Permafrost depth  
Active Layer Thickness  
Soil carbon  
Soil moisture  
River discharge  
CO2 atmospheric concentrations  
Total water storage (TWS) anomalies

### Atmospheric variables to be added for coupled simulations:

Tair  
Qair  
Rainf  
Snowf  
SWdown  
LWdown  
Wind

## 2 Datasets

### 2.1 Template to be filled

IPSL contact person	
Other contact person	
Source	
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	
Spatial resolution	
Temporal resolution	
Period covered	
Data policy	
Comments	
Caveat	
References	

## 2.2 Fluxes

### 2.2.1 GPP

IPSL contact person	Sebastiaan Luyssaert <Sebastiaan.Luyssaert@lsce.ipsl.fr>
Other contact person	MPI: Martin Jung <mjung@bgc-jena.mpg.de>
Source	<a href="http://www.bgc-jena.mpg.de/geodb/projects/Home.php">http://www.bgc-jena.mpg.de/geodb/projects/Home.php</a>
IPSL server/path/filename	asterix/home/data03/dofoco/VALIDATION/data_sets/2014129144019EnsembleGPP_GL.nc
General description	GPP derived by upscaling observations from the current global network of eddy-covariance towers
Version	May12
doi	n.a.
Global/Regional/Site	Global
Spatial resolution	0.5° x 0.5° grid
Temporal resolution	Monthly
Period covered	1982 to 2012
Data policy	Inform the author of the intended use
Comments	-
Caveat	All known caveats that apply to the eddy-covariance method apply to thi sproduct. Note that the upscaling makes use of similar remote-sensed land cover maps and climatologies used to drive ORCHIDEE. Spatial and temporal patterns in this product are thus not fully independent from spatial and temporal patterns of ORCHIDEE (off-line). The network is relatively sparse outside Europe, the United States and Japan. The quality of the product remains largely untested outside these regions.
References	Jung, M., et al. (2011), Global patterns of land-atmosphere fluxes of carbon dioxide, latent heat, and sensible heat derived from eddy covariance, satellite, and meteorological observations, <i>J. Geophys. Res.</i> , 116, G00J07, doi:10.1029/2010JG001566.

### 2.2.2 Evapotranspiration

#### 2.2.2.1 Global products

##### 2.2.2.1.1 FLUXNET product

IPSL contact person	Sebastiaan Luyssaert <Sebastiaan.Luyssaert@lsce.ipsl.fr>
Other contact person	MPI: Martin Jung <mjung@bgc-jena.mpg.de>
Source	Personal communication with Martin Jung
IPSL server/path/filename	asterix/home/data03/dofoco/VALIDATION/data_sets/201432814404042_EnsembleLEcor_May12.nc
General description	Upscaled eddy-covariance based evapotranspiration
Version	201432814404042
doi	n.a.
Global/Regional/Site	Global

Spatial resolution	0.5° x 0.5° grid
Temporal resolution	Monthly
Period covered	1982 to 2012
Data policy	Inform the author of the intended use
Comments	-
Caveat	All known caveats that apply to the eddy-covariance method apply to this product. Note that the upscaling makes use of similar remote-sensed land cover maps and climatologies used to drive ORCHIDEE. Spatial and temporal patterns in this product are thus not fully independent from spatial and temporal patterns of ORCHIDEE (off-line). The network is relatively sparse outside Europe, the United States and Japan. The quality of the product remains largely untested outside these regions.
References	Jung, M., et al. (2011), Global patterns of land-atmosphere fluxes of carbon dioxide, latent heat, and sensible heat derived from eddy covariance, satellite, and meteorological observations, <i>J. Geophys. Res.</i> , 116, G00J07, doi:10.1029/2010JG001566.

### 2.2.2.1.2 LANDFLUX-Eval product

IPSL contact person	Philippe Peylin
Other contact person	ETH: Sonia Senerivatne
Source	<a href="http://www.iac.ethz.ch/groups/seneviratne/research/LandFlux-EVAL">http://www.iac.ethz.ch/groups/seneviratne/research/LandFlux-EVAL</a>
IPSL server/path/filename	LSCE: /home/satellites1/peylin/ORCHIDEE/DATA-EVALUATION/LandFluxEVAL.merged.89-05.monthly.all.nc
General description	Evapotranspiration flux from the LandFlux Eval project: merged synthesis product combining different approaches
Version	Version 1
doi	Mueller et al. 2013, HESS, doi:10.5194/hess-17-3707-2013
Global/Regional/Site	Global
Spatial resolution	1° x 1°
Temporal resolution	monthly
Period covered	1989-2005
Data policy	Contact responsables for use in publication: Martin Hirschi (martin.hirschi@env.ethz.ch) and Sonia Seneviratne (sonia.seneviratne@env.ethz.ch) Data policy: <a href="http://www.iac.ethz.ch/groups/seneviratne/research/LandFlux-EVAL/DataPolicy">http://www.iac.ethz.ch/groups/seneviratne/research/LandFlux-EVAL/DataPolicy</a>
Comments	Mixture of model and “data oriented” approaches; should not be taken as the “ground truth”
Caveat	
References	Mueller et al. 2013, HESS, doi:10.5194/hess-17-3707-2013

### 2.2.2.1.3 Fisher product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Joshua Fisher <joshbfisher@gmail.com>, <jbfisher@jpl.nasa.com>
Source	<a href="http://www.landflux.org/Data.php">http://www.landflux.org/Data.php</a>
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/EVA P/ET_UCB_8695.nc
General description	Bio-meteorological approach for translating Priestley–Taylor estimates of potential evapotranspiration into rates of actual evapotranspiration. Five model inputs are required: net radiation (Rn), normalized difference vegetation index (NDVI), soil adjusted vegetation index (SAVI), maximum air temperature (Tmax), and water vapor pressure (ea). Our model requires no calibration, tuning or spin-ups. The model is tested and validated against eddy covariance measurements (FLUXNET) from a wide range of climates and plant functional types—grassland, crop, and deciduous broadleaf, evergreen broadleaf, and evergreen needleleaf forests. Global estimates of evapotranspiration at a temporal resolution of monthly and a spatial resolution of 1° during the years 1986–1993 were determined using globally consistent datasets from the International Satellite Land-Surface Climatology Project, Initiative II (ISLSCP-II) and the Advanced Very High Resolution Spectroradiometer (AVHRR).
Version	-
doi	-
Global/Regional/Site	Global
Spatial resolution	0.5°x0.5°
Temporal resolution	Monthly
Period covered	1986-1995
Data policy	Inform the author of the intended use. Cite the reference papers.
Comments	Put in netcdf format by Matthieu Guimberteau <u>Units</u> : mm/month
Caveat	-
References	Fisher, J. B., K. P. Tu, and D. D. Baldocchi (2008), Global estimates of the land atmosphere water flux based on monthly AVHRR and ISLSCP II data, validated at 16 FLUXNET sites, Remote Sens. Environ., 112(3), 901–919, doi:10.1016/j.rse.2007.06.025.

#### 2.2.2.1.4 MPI/GLEAM/NTSG/PKU product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	- MPI: Martin Jung <mjung@bgc-jena.mpg.de> - GLEAM: Diego Miralles <Diego.Miralles@bristol.ac.uk> - NTSG: Ke Zhang <zhang@ntsg.umd.edu> or J.S. Kimball <johnk@ntsg.umd.edu> - PKU: Shilong Piao <slpiao@pku.edu.cn>
Source	- MPI: Personal communication with Martin Jung

	<ul style="list-style-type: none"> <li>- GLEAM: Personal communication with Diego Miralles</li> <li>- NTSG: <a href="http://www.ntsg.umd.edu/project/et">http://www.ntsg.umd.edu/project/et</a></li> <li>- PKU: Personal communication with Philippe Ciais</li> </ul>
IPSL server/path/filename	<p>climserv:  /homedata/mguimber/DONNEES_VALIDATION_ORCH/EVA  P/ET_MPI_GLEAM_NTSG_PKU_1deg_8406.nc</p>
General description	<ul style="list-style-type: none"> <li>- <u>MPI</u>: This is a data set of up-scaled monthly global Evapotranspiration. It is based on empirical up-scaling of FLUXNET data from the La-Thuille-2007 synthesis effort (<a href="http://www.fluxdata.org">www.fluxdata.org</a>).</li> <li>- <u>GLEAM</u>: derive evaporation from satellite observations. The approach uses a variety of satellite-sensor products to estimate daily evaporation at a global scale and 0.25 degree spatial resolution. Central to this methodology is the use of the Priestley and Taylor (PT) evaporation model. The minimalistic PT equation combines a small number of inputs, the majority of which can be detected from space. This reduces the number of variables that need to be modelled. Key distinguishing features of the approach are the use of microwave-derived soil moisture, land surface temperature and vegetation density, as well as the detailed estimation of rainfall interception loss. The modelled evaporation is validated against one year of eddy covariance measurements from 43 stations.</li> <li>- <u>NTSG</u>: The objective was to generate a global long-term (1983-2006) daily ET record with well quantified accuracy for studies on regional/global water balances changes. We applied a satellite remote sensing based evapotranspiration (ET) algorithm to assess global terrestrial ET. The algorithm quantifies canopy transpiration and soil evaporation using a modified Penman-Monteith approach with biome-specific canopy conductance determined from the NDVI, and quantifies open water evaporation using a Priestley-Taylor approach. These algorithms were applied globally using AVHRR GIMMS NDVI, NCEP/NCAR Reanalysis (NNR) daily surface meteorology and NASA/GEWEX Surface Radiation Budget (SRB) Release-3.0 solar radiation inputs. We used observations from FLUXNET tower sites representative of the major global vegetation types to parameterize an NDVI-based canopy conductance model and then validated the global ET algorithm using measurements from additional, independent flux towers.</li> <li>- <u>PKU</u>: A satellite-based water balance method is developed to model global evapotranspiration (ET) through coupling a water balance (WB) model with a machine-learning algorithm (the model tree ensemble, MTE) (hereafter WB-MTE). The WB-MTE algorithm was firstly trained by combining monthly WB-estimated basin ET with the potential drivers (e.g., radiation, temperature, precipitation, wind speed, and vegetation index) across 95 large river basins (5824 basin-months) and then applied to establish global monthly ET maps at a spatial resolution of 0.5° from 1982 to 2009.</li> </ul>

Version	- MPI: sept. 2013 - GLEAM: dec. 2011 - NTSG: Oct. 2010 - PKU: 2014
doi	-
Global/Regional/Site	Global
Spatial resolution	1°x1°
Temporal resolution	Monthly
Period covered	1984-2006
Data policy	Inform the author of the intended use. Cite the reference papers.
Comments	The four datasets have been interpolated to the same resolution of 1°x1° by Juan-Pablo Boisier <jpboisier@ipsl.jussieu.fr>. Put in netcdf format by Juan-Pablo Boisier <u>Units</u> : mm/day
Caveat	-
References	- <u>MPI</u> : Jung, M., et al. (2011), Global patterns of land-atmosphere fluxes of carbon dioxide, latent heat, and sensible heat derived from eddy covariance, satellite, and meteorological observations, <i>J. Geophys. Res.</i> , 116, G00J07, doi:10.1029/2010JG001566. - <u>GLEAM</u> : Miralles, D. G., Holmes, T. R. H., De Jeu, R. A. M., Gash, J. H., Meesters, A. G. C. A., and Dolman, A. J.: Global land-surface evaporation estimated from satellite-based observations, <i>Hydrol. Earth Syst. Sci.</i> , 15, 453-469, doi:10.5194/hess-15-453-2011, 2011. - <u>NTSG</u> : Zhang, K., J.S. Kimball, R.R. Nemani, and S.W. Running, 2010. A continuous satellite-derived global record of land surface evapotranspiration from 1983-2006. <i>Water Resources Research</i> doi:10.1029/2009WR008800. - <u>PKU</u> : Zeng, Z. Z., T. Wang, F. Zhou, P. Ciais, J. F. Mao, X. Y. Shi, and S. L. Piao (2014), A worldwide analysis of spatiotemporal changes in water balance-based evapotranspiration from 1982 to 2009, <i>J. Geophys. Res. Atmos.</i> , 119, doi:10.1002/2013JD020941

## 2.2.2.2 Regional products (Amazon)

### 2.2.2.2.1 MODIS product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Qiaozhen Mu <qiaozhen@ntsg.umd.edu>
Source	MODIS. <a href="http://ntsg.umd.edu/project/mod16">http://ntsg.umd.edu/project/mod16</a>
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/EVA P/ET_MOD16_amazone_0008.nc
General description	The MOD16 global evapotranspiration (ET)/latent heat flux (LE)/potential ET (PET)/potential LE (PLE) datasets are regular 1-km <sup>2</sup> land surface ET datasets for the 109.03 Million km <sup>2</sup> global vegetated land areas at 8-day, monthly and annual



	<p>intervals. The dataset covers the time period 2000 – 2010. The MOD16 ET datasets are estimated using Mu et al.'s improved ET algorithm (2011) over previous Mu et al.'s paper (2007a). The ET algorithm is based on the Penman-Monteith equation (Monteith, 1965). Surface resistance is an effective resistance to evaporation from land surface and transpiration from the plant canopy. Terrestrial ET includes evaporation from wet and moist soil, from rain water intercepted by the canopy before it reaches the ground, and the transpiration through stomata on plant leaves and stems. Evaporation of water intercepted by the canopy is a very important water flux for ecosystems with a high LAI. Canopy conductance for plant transpiration is calculated by using LAI to scale stomatal conductance up to canopy level.</p>
Version	MOD16
doi	-
Global/Regional/Site	Amazon basin
Spatial resolution	1°x1°
Temporal resolution	Monthly
Period covered	2000-2008
Data policy	-
Comments	Put in netcdf format by Matthieu Guimberteau <u>Units</u> : mm/month
Caveat	-
References	<p>Mu, Q.; Zhao, M. &amp; Running, S. Improvements to a MODIS global terrestrial evapotranspiration algorithm Remote Sens. Environ., Elsevier, 2011, 115, 1781-1800</p> <p>Mu, Q.; Heinsch, F.; Zhao, M. &amp; Running, S. Development of a global evapotranspiration algorithm based on MODIS and global meteorology data Remote Sens. Environ., Elsevier, 2007, 111, 519-536</p>

#### 2.2.2.2.2 Shuttleworth product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Shuttleworth <shuttle@email.arizona.edu>, <ornldaac@ornl.gov>
Source	<a href="http://daac.ornl.gov/index.shtml">http://daac.ornl.gov/index.shtml</a>
IPSL server/path/filename	climserv:/homedata/mguimber/DONNEES_VALIDATION_ORCH/EVAP/ET_Shuttleworth_amazone_8384.nc
General description	<p>Sample measurements of dry-canopy evaporation from three intensive field campaigns and continuous measurements of rainfall interception loss are used to calibrate a micrometeorological model of evaporation from the forest canopy. Evaporation at this site is calculated by the model from September 1983 to September 1985 by using hourly-average meteorological measurements routinely taken above the canopy, and regular measurements of soil water tension averaged to a depth of one meter.</p>
Version	-

doi	-
Global/Regional/Site	Amazonia
Spatial resolution	One site over Amazonia
Temporal resolution	Monthly
Period covered	1983-1984
Data policy	-
Comments	Put in netcdf format by Matthieu Guimberteau <u>Units</u> : mm/month
Caveat	-
References	Shuttleworth, W. Evaporation from Amazonian rainforest <i>Proc. R. Soc. London, Ser. B</i> , 1988, 233, 321-346

## 2.3 Net land carbon fluxes (Inversions & GCP)

### 2.3.1 Mean Carbon fluxes from atmospheric inversions

IPSL contact person	Philippe Peylin
Other contact person	no
Source	File to be created from an ensemble of atmospheric inversion: fco2_CTRACKER-US-2013_Oct2014-ext3_2001-2012_monthlymean_XYT.nc fco2_CTRACKER-EU_Oct2014-ext3_2001-2010_monthlymean_XYT.nc fco2_JENA-s96-V3-6_Oct2014-ext3_1996-2012_monthlymean_XYT.nc fco2_LSCE-var-MACC-V12-3_Oct2014-ext3_1980-2011_monthlymean_XYT.nc
IPSL server/path/filename	LSCE: /home/scratch01/peylin/TEST2/OUTPUT_WEB/Inversions/monthlymean/
General description	Mean of 4 state of the art atmospheric inversions
Version	V1
doi	
Global/Regional/Site	Global
Spatial resolution	1 x 1 degree
Temporal resolution	Monthly
Period covered	2001 – 2010
Data policy	Contact Philippe Peylin: he will contact the PIs of the individual inversions if the data is needed for a publication (agreement of the PIs is required).
Comments	Should be used mainly for the mean seasonal cycle and the large continental scale net CO2 flux gradients.
Caveat	Regional scale fluxes not robust
References	Peylin et al. (2013)

### 2.3.2 Global integrated annual land carbon flux

IPSL contact person	Philippe Peylin
Other contact person	Lequére Corinne
Source	<a href="http://www.globalcarbonproject.org/carbonbudget/14/data.htm">http://www.globalcarbonproject.org/carbonbudget/14/data.htm</a>
IPSL server/path/filename	A récupérer !
General description	Land natural net flux of CO2
Version	V2014
doi	Lequére et al. 2014; doi:10.5194/essdd-7-521-2014
Global/Regional/Site	1 global number per year
Spatial resolution	no
Temporal resolution	yearly
Period covered	1959-2013
Data policy	The use of data is conditional on citing the original data sources. For research projects, if the data are essential to the work, or if an important result or conclusion depends on the data, co-authorship may need to be considered. The Global Carbon Project facilitates access to data to encourage its use and promote a good understanding of the carbon cycle. Respecting original data sources is key to help secure the support of data providers to enhance, maintain and update valuable data.
Comments	Use to validate the global NEE of a model .
Caveat	
References	Lequére et al. (2014)

## 2.4 Soil respiration

### 2.4.1 Soil respiration (Raich)

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	James W. Raich Department of Botany Iowa State University Ames, Iowa 50011-1020 e-mail: jraich@iastate.edu
Source	Global Annual Soil Respiration Data (Raich and Schlesinger 1992)
IPSL server/path/filename	Contact me
General description	Compilation of data on soil respiration before 1992
Version	na
doi	
Global/Regional/Site	Site distributed over the world
Spatial resolution	
Temporal resolution	Depending on the site
Period covered	Depending on the site but before 1992 and generally data for one year
Data policy	Free
Comments	
Caveat	
References	Raich, J.W. and W.H. Schlesinger. 1992. The global carbon

	dioxide flux in soil respiration and its relationship to vegetation and climate. Tellus 44B: 81-99.
--	---

## 2.4.2 Soil respiration (Bond-Lamberty)

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	Ben Bond-Lamberty (bondlamberty@pnnl.gov)
Source	Soil Respiration DataBase (SRDB)
IPSL server/path/filename	Contact me
General description	Compilation of data on soil respiration
Version	na
doi	doi:10.5194/bgd-7-1321-2010.
Global/Regional/Site	Site distributed over the world
Spatial resolution	
Temporal resolution	Depending on the site but generally yearly
Period covered	Depending on the site
Data policy	Free
Comments	
Caveat	
References	Bond-Lamberty and Thomson (2010). A global database of soil respiration measurements, Biogeosciences 7:1321-1344, doi:10.5194/bgd-7-1321-2010.

## 2.5 Soil variables

### 2.5.1 Soil variables ISRIC

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://soilgrids1km.isric.org/index.html">http://soilgrids1km.isric.org/index.html</a>
IPSL server/path/filename	/ccc/store/cont003/dsm/p529guen/ISRIC_1km_Map/
General description	Soil variables map including soil carbon but also many others
Version	1.
doi	na
Global/Regional/Site	Global
Spatial resolution	1km
Temporal resolution	Average over the last years or decades but not clear
Period covered	See above
Data policy	Free
Comments	
Caveat	The map is coming from several soil measurements but the map is constructed using pedotransfer function and is therefore a products and raw data are not available
References	ISRIC – World Soil Information, 2013. SoilGrids: an automated system for global soil mapping. Available for download at <a href="http://soilgrids1km.isric.org">http://soilgrids1km.isric.org</a> .

IPSL contact person	Bertrand Guenet: Bertrand.guenet@lsce.ipsl.fr
Other contact person	
Source	<a href="http://soilgrids.org/">http://soilgrids.org/</a>
IPSL server/path/filename	obelix:/home/satellites5/maignan/ORCHIDEE/EVALUATION/ISRIC_50km_Map/SoilGrids50km.csv
General description	Soil variables map including soil carbon but also many others
Version	1.
doi	na
Global/Regional/Site	Global
Spatial resolution	50km
Temporal resolution	Average over the last years or decades but not clear
Period covered	See above
Data policy	Free
Comments	
Caveat	The map is coming from several soil measurements but the map is constructed using pedotransfer function and is therefore a products and raw data are not available
References	ISRIC – World Soil Information, 2013. SoilGrids: an automated system for global soil mapping. Available for download at <a href="http://soilgrids1km.isric.org">http://soilgrids1km.isric.org</a> .

### 2.5.2 Soil variables HWSD

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://webarchive.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/index.html?sb=1">http://webarchive.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/index.html?sb=1</a>
IPSL server/path/filename	/home/orchidee01/bguenet/HWSD
General description	Soil variables map including soil carbon but also many other
Version	1.2
doi	na
Global/Regional/Site	Global
Spatial resolution	0.5° for the one available on the IPSL server but higher resolutions are available on the website
Temporal resolution	Average over the last years or decades but not clear
Period covered	See above
Data policy	Free
Comments	
Caveat	The map is coming from several soil measurements but the map is constructed using pedotransfer function and is therefore a products and raw data are not available
References	FAO/IIASA/ISRIC/ISSCAS/JRC, 2012. <i>Harmonized World Soil Database (version 1.2)</i> . FAO, Rome, Italy and IIASA, Laxenburg, Austria.

### 2.5.3 Soil variables IGBP

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://daac.ornl.gov/cgi-bin/dsvviewer.pl?ds_id=569">http://daac.ornl.gov/cgi-bin/dsvviewer.pl?ds_id=569</a>
IPSL server/path/filename	Contact me
General description	Soil variables map including soil carbon but also many other
Version	na
doi	doi:10.3334/ORNLDAAC/569
Global/Regional/Site	Global
Spatial resolution	5x5 arc-minutes
Temporal resolution	Average over the last years or decades but not clear
Period covered	See above
Data policy	Free
Comments	
Caveat	The map is coming from several soil measurements but the map is constructed using pedotransfer function and is therefore a products and raw data are not available
References	Global Soil Data Task Group. 2000. Global Gridded Surfaces of Selected Soil Characteristics (IGBP-DIS). [Global Gridded Surfaces of Selected Soil Characteristics (International Geosphere-Biosphere Programme - Data and Information System)]. Data set. Available on-line [ <a href="http://www.daac.ornl.gov">http://www.daac.ornl.gov</a> ] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/569.

### 2.5.4 Soil carbon profiles

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	Depending on the data used you would have to contact the dataholders see the Fair use policy.
Source	International Soil Carbon Network Database: Profile Carbon to 1m.
IPSL server/path/filename	Contact me
General description	Soil carbon with vertical distribution
Version	na
doi	
Global/Regional/Site	Site distributed over the world
Spatial resolution	
Temporal resolution	Measurement done once around 2000
Period covered	See above
Data policy	Use of data assumes that the user has joined the ISCN and will act according to the mission and guidelines stated in the Charter. Phase II data are available to select users on the condition that contributors will be invited to assist with interpretation, presentations, and publications, if these tasks are being performed by a user other than the original contributor of the

	data (such as a colleague of the contributor). When using Phase III data, users are encouraged to contact original data contributors for questions or clarifications; users agree to cite and/or acknowledge the data contributors and the ISCN in presentations and publications. References of all accepted papers developed from ISCN data products must be sent to the ISCN Coordinator. Although these policies are intended to encourage communication between data contributors and data users, the interpretation of data and adherence to fair use guidelines are ultimately the responsibility of the user of ISCN products.
Comments	
Caveat	
References	International Soil Carbon Network, 2012. ISCN Database report: Profile Carbon to 1m. < <a href="http://www.fluxdata.org/nscn/Data/AccessData/SitePages/Carbonto1M.aspx">http://www.fluxdata.org/nscn/Data/AccessData/SitePages/Carbonto1M.aspx</a> >. Accessed 12 October 2012

## 2.6 Litter decomposition

IPSL contact person	Bertrand Guenet <Bertrand.Guenet@lsce.ipsl.fr>
Other contact person	
Source	LTER Intersite Fine Litter Decomposition Experiment (LIDET), 1990 to 2002
IPSL server/path/filename	Contact me
General description	Litter decomposition experiments on several sites around the world
Version	na
doi	
Global/Regional/Site	Site distributed over the world
Spatial resolution	
Temporal resolution	Depending on the site
Period covered	Depending on the site but mainly between 1990-2002
Data policy	<p>The following General Data Use Agreement specifies the conditions for the use of most Andrews datasets released for general public use.</p> <p>1) Acceptable use. Use of the dataset will be restricted to academic, research, educational, government, recreational, or other not-for-profit professional purposes. The Data User is permitted to produce and distribute derived works from this dataset provided that they are released under the same license terms as those accompanying this Data Set. Any other uses for the Data Set or its derived products will require explicit permission from the Data Set Owner.</p> <p>2) Redistribution. The data are provided for use by the Data User. The metadata and this license must accompany all copies made and be available to all users of this Data Set. The Data User will not redistribute the original Data Set beyond this collaboration sphere.</p> <p>3) Citation. It is considered a matter of professional ethics to</p>

	<p>acknowledge the work of other scientists. Citations are provided on the primary web page for each data set.</p> <p>4) Acknowledgement. The Data User should acknowledge any institutional support or specific funding awards referenced in the metadata accompanying this dataset in any publications where the Data Set contributed significantly to its content. For example:</p> <p style="padding-left: 40px;">Data sets were provided by the HJ Andrews Experimental Forest research program, funded by the National Science Foundation's Long-Term Ecological Research Program (DEB 0823380), US Forest Service Pacific Northwest Research Station, and Oregon State University.</p> <p>5) Notification. The Data User will notify the Data Set Contact when any derivative work or publication based on or derived from the Data Set is distributed. Please send any resulting publications in PDF format to the Andrews Experimental Forest LTER Program (Email: <a href="mailto:hjapubs@fsl.orst.edu">hjapubs@fsl.orst.edu</a>).</p>
Comments	
Caveat	
References	<p>Harmon, M. 2013. LTER Intersite Fine Litter Decomposition Experiment (LIDET), 1990 to 2002. Long-Term Ecological Research. Forest Science Data Bank, Corvallis, OR. [Database]. Available:  <a href="http://andrewsforest.oregonstate.edu/data/abstract.cfm?dbcode=TD023">http://andrewsforest.oregonstate.edu/data/abstract.cfm?dbcode=TD023</a> (5 September 2014).</p>

## 2.7 LAI

### 2.7.1 GIMMS 3g product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>, Ben Poulter? Abdoul-Khadre Traoré?
Other contact person	Zaichun Zhu <zzc@bu.edu>, <zhu.zaichun@gmail.com>
Source	LAI GIMMS 3G
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/LAI/gimms-LAI-1982_2010.nc
General description	A neural network algorithm was first developed between the new improved third generation Global Inventory Modeling and Mapping Studies (GIMMS) Normalized Difference Vegetation Index (NDVI3g) and best-quality Terra Moderate Resolution Imaging Spectroradiometer (MODIS) LAI and FPAR products for the overlapping period 2000-2009. The trained neural network algorithm was then used to generate corresponding LAI3g and FPAR3g data sets with the following attributes: 15-day temporal frequency, 1/12 degree spatial resolution and temporal span of July 1981 to December 2011.
Version	-



doi	-
Global/Regional/Site	Global
Spatial resolution	0.5° x0.5°
Temporal resolution	Half-monthly
Period covered	1982-2010
Data policy	?
Comments	<u>Units</u> : -
Caveat	-
References	Zhu, Z.; Bi, J.; Pan, Y.; Ganguly, S.; Anav, A.; Xu, L.; Samanta, A.; Piao, S.; Nemani, R.R.; Myneni, R.B. Global Data Sets of Vegetation Leaf Area Index (LAI)3g and Fraction of Photosynthetically Active Radiation (FPAR)3g Derived from Global Inventory Modeling and Mapping Studies (GIMMS) Normalized Difference Vegetation Index (NDVI3g) for the Period 1981 to 2011. Remote Sens. 2013, 5, 927-948.

## 2.7.2 GLASS product

IPSL contact person	Catherine Ottlé
Other contact person	
Source	<a href="http://glcf.umd.edu/data/lai/">http://glcf.umd.edu/data/lai/</a>
IPSL server/path/filename	
General description	
Version	
doi	doi:10.6050/glass863.3004.db
Global/Regional/Site	global
Spatial resolution	0.05° 1982-1999 (AVHRR), 1km 2000-2012 (MODIS)
Temporal resolution	8-day
Period covered	1982-2012
Data policy	
Comments	
Caveat	
References	Citation Format: Shunlin Liang, Zhiqiang Xiao. Global Land Surface Products: Leaf Area Index Product Data Collection (1985-2010), Beijing Normal University, 2012. doi:10.6050/glass863.3004.db Associated Peer-Reviewed Publication (cite these publications whenever the data are used): Xiao Z., S. Liang, J. Wang, et al., Use of General Regression Neural Networks for Generating the GLASS Leaf Area Index Product from Time Series MODIS Surface Reflectance. IEEE Transactions on Geoscience and Remote Sensing, 2013, doi:10.1109/TGRS.2013.2237780.

## 2.8 Forest structure

## 2.8.1 Forest above ground biomass

### 2.8.1.1 Thurner product

IPSL contact person	Philippe Peylin
Other contact person	Thurner data set
Source	
IPSL server/path/filename	LSCE: /home/satellites7/CARBONES/FOREST_BIOMASS/BIOMASS_THURNER/Thurner_total_aggregated_mean.nc
General description	Above ground forest biomass for temperate and boreal regions of the northern hemisphere
Version	
doi	Thurner et al. 2014
Global/Regional/Site	Temperate and boreal regions only
Spatial resolution	0.5 x 0.5 degree
Temporal resolution	Mean field (1 time step)
Period covered	
Data policy	
Comments	
Caveat	
References	

### 2.8.1.2 Saatchi product

IPSL contact person	Philippe Peylin
Other contact person	Saatchi data set
Source	
IPSL server/path/filename	LSCE: /home/satellites8/vbastri/BIOMASS/saatchi.nc (with original units, tC/ha)
General description	Above ground forest biomass for tropical regions
Version	
doi	
Global/Regional/Site	Tropical data set
Spatial resolution	0.5 x 0.5 degree
Temporal resolution	Mean field (1 time step)
Period covered	
Data policy	Mail from S. Saatchi to P. Ciais (15/01/26) “All we need is the reference to the paper and acknowledgements. However, in some cases, we would request collaboration on the use of the product and co-authorship if I get involved in the work.”
Comments	
Caveat	
References	

### 2.8.1.3 Baccini product

IPSL contact person	Philippe Ciais
Other contact person	Baccini data set
Source	
IPSL server/path/filename	
General description	Above ground forest biomass for tropical regions
Version	
doi	
Global/Regional/Site	Tropical data set
Spatial resolution	
Temporal resolution	
Period covered	
Data policy	
Comments	
Caveat	
References	<p>Baccini, A., Goetz, S. J., Walker, W. S., Laporte, N. T., Sun, M., Sulla-Menashe, D., Hackler, J., Beck, P. S. A., Dubayah, R., Friedl, M. A., Samanta, S., and Houghton, R. A.: Estimated carbon dioxide emissions from tropical deforestation improved by carbon-density maps, <i>Nature Clim. Change</i>, 2, 182-185, 2012.</p> <p>Mitchard et al.: Uncertainty in the spatial distribution of tropical forest biomass: a comparison of pan-tropical maps. <i>Carbon Balance and Management</i> 2013 8:10.</p>

### 2.8.2 Forest basal area

IPSL contact person	Sebastiaan Luyssaert <Sebastiaan.Luyssaert@lsce.ipsl.fr>
Other contact person	JRC: Daniele de Rigo<daniele.de-rigo@ext.jrc.ec.europa.eu>
Source	Personal communication with Daniele de Rigo (expected to be released through <a href="http://forest.jrc.ec.europa.eu/efdac/">http://forest.jrc.ec.europa.eu/efdac/</a> )
IPSL server/path/filename	asterix/home/data03/dofoco/VALIDATION/data_sets/BA_original_JRC.nc
General description	Spatially interpolated plot-level basal area of forest. The observations come from a the compilation of European forest inventory data held at the JRC.
Version	Beta-release
doi	n.a.
Global/Regional/Site	EU-25 minus the UK, Poland and Greece
Spatial resolution	Lon: ~0.4°, Lat: ~0.6°
Temporal resolution	Single product assigned to the year 2000.
Period covered	Undefined. The product is based on forest inventories made between 1980 and 2010 (depending on the country). These inventory data are combined in a single product.
Data policy	Beta-release. Contact the JRC contact for each use.
Comments	The original data were regridded on a 1° x 1° and 0.5° x 0.5° grid. The regridded data are available from

	asterix/home/data03/dofoco/VALIDATION/data_sets/
Caveat	The beta-release does not distinguish the basal area for different species. The product contains only forest data. Although the product contains a wealth of observations, the algorithm to upscale from the plot to the pixel have not been validated yet.
References	n.a.

### 2.8.3 Canopy height

IPSL contact person	Sebastiaan Luysaert <Sebastiaan.Luysaert@lsce.ipsl.fr>
Other contact person	The author can be contacted through <a href="http://lidarradar.jpl.nasa.gov/">http://lidarradar.jpl.nasa.gov/</a>
Source	<a href="http://lidarradar.jpl.nasa.gov/">http://lidarradar.jpl.nasa.gov/</a>
IPSL server/path/filename	asterix/home/data03/dofoco/VALIDATION/data_sets/Height_original_Simard.nc
General description	Radar based (GLAS) remote-sensing product of canopy height
Version	1.0
doi	n.a.
Global/Regional/Site	Global
Spatial resolution	1km x 1km
Temporal resolution	Single product assigned to the year 2005
Period covered	2005
Data policy	Free use
Comments	The original data were regridded on a 1° x 1° and 0.5° x 0.5° grid. The regridded data are available from <a href="http://asterix/home/data03/dofoco/VALIDATION/data_sets/">asterix/home/data03/dofoco/VALIDATION/data_sets/</a>
Caveat	V1.0 does not distinguish the canopy height of different species. The product thus contains data from crops, grasses and forests. Additional post-processing is required for a meaningful comparison against model simulations. The exact time of the measurements is not given, hence, the height of grassland and cropland is meaningless. Intra-annual variation in tree height is sufficiently small, so this caveat does not apply to trees.
References	Simard, M., N. Pinto, J. B. Fisher, and A. Baccini (2011), Mapping forest canopy height globally with spaceborne lidar, <i>J. Geophys. Res.</i> , 116, G04021, doi:10.1029/2011JG001708.

### 2.9 Soil moisture

IPSL contact person	Catherine Ottlé <Catherine.Ottlé@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://www.esa-soilmoisture-cci.org/">http://www.esa-soilmoisture-cci.org/</a>
IPSL server/path/filename	
General description	ESA CCI ECV
Version	v02.1
doi	
Global/Regional/Site	global

Spatial resolution	0.250° x 0.250° [89.875°N-89.75°S ; 179.875°W:179.825°E]
Temporal resolution	daily
Period covered	1978-2010
Data policy	
Comments	
Caveat	
References	

## 2.10 Water height

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Jean-François Crétaux <jean-francois.cretaux@legos.obs-mip.fr>
Source	Topex Poseidon dataset from the "HYDROWEB" hydrological database of the LEGOS/GOHS team: <a href="http://www.legos.obs-mip.fr/soa/hydrologie/hydroweb/Page_2.html">http://www.legos.obs-mip.fr/soa/hydrologie/hydroweb/Page_2.html</a>
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/HAUTEUR_EAU/TP_*.txt
General description	The water level time series are based on altimetry measurements from Topex/Poseidon.
Version	-
doi	-
Global/Regional/Site	Amazon and Negro rivers
Spatial resolution	Virtual stations distributed over the Amazon and Negro rivers
Temporal resolution	-
Period covered	1993-2002
Data policy	-
Comments	<u>Units</u> : m
Caveat	-
References	-

## 2.11 Soil water profiles

### 2.11.1 Hollinger product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Steven Hollinger <hollingr@uiuc.edu> and Bob Scott <rwscott1@uiuc.edu>
Source	<a href="http://climate.envsci.rutgers.edu/soil_moisture/illinois.html">http://climate.envsci.rutgers.edu/soil_moisture/illinois.html</a>
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/PROFILS_SOIL_WATER_CONTENT/ILLINOIS/SWC_Illinois_stations.nc
General description	This data set consists of total soil moisture measured at 19 stations as part of Water and Atmospheric Resources Monitoring

	Program (WARM) in the state of Illinois, USA, measured with the neutron probe technique, calibrated with gravimetric observations. The data are measured for the top 10 cm of soil, and then for 20 cm layers (e.g., 10-30 cm, 30-50 cm, ...) down to a depth of 2 m. The vegetation at all stations is grass, except for one station with bare soil measurements, at the same location as a grass-covered station.
Version	Early 2008
doi	-
Global/Regional/Site	Illinois state
Spatial resolution	Site distributed over the Illinois
Temporal resolution	Monthly
Period covered	1997-1999
Data policy	Inform the author of the intended use. Cite the reference papers.
Comments	Put in netcdf format by Matthieu Guimberteau <u>Units: %</u>
Caveat	-
References	Hollinger, Steven E., and Scott A. Isard, 1994: A soil moisture climatology of Illinois. <i>J. Climate</i> , <b>7</b> , 822-833.

### 2.11.2 ABRACOS product

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	uso@daac.ornl.gov
Source	Pre-LBA Anglo-Brazilian Amazonian Climate Observation Study (ABRACOS) Data. Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC) [ <a href="http://daac.ornl.gov">http://daac.ornl.gov</a> ]
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/PROFILS_SOIL_WATER_CONTENT/AMAZON_from_ABRACOS/* .DAT
General description	These data sets consist of soil moisture readings measured at six sites in Brazil. Readings were taken close to each automatic weather station (AWS) except at Manaus Forest where data was recorded in primary forest close to the pasture site.
Version	-
doi	-
Global/Regional/Site	Amazon basin
Spatial resolution	Site distributed over the Amazon basin
Temporal resolution	Daily (irregularly)
Period covered	1990-1993
Data policy	-
Comments	The first three columns of each file give the year, day number, and time (decimal hour) of measurement. Thereafter, the remaining columns contain the mean soil moisture, at various depths, in units of moisture volume fraction (m <sup>3</sup> /m <sup>3</sup> ). The means are calculated as the linear average of all access tubes at each

	site, with the exception of Reserva Jaru. <u>Units:</u> m3/m3
Caveat	-
References	Hodnett, M.G., da Silva, L.P., da Rocha, H.R. and Cruz Senna, R.C., 1995. Seasonal soil water storage changes beneath central Amazonian rainforest and pasture. <i>J. Hydrol.</i> , 170, 233-254.

## 2.12 Change in total water storage

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Felix Landerer <Felix.W.Landerer@jpl.nasa.gov>
Source	GRACE (Gravity Recovery and Climate Experiments) from CSR (Center for Space Research at University of Texas, Austin): <a href="http://grace.jpl.nasa.gov/data/gracemonthlymassgridsland/">http://grace.jpl.nasa.gov/data/gracemonthlymassgridsland/</a>
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/VARIATION_STOCKS_EAU/GRCTellus.CSR.200204_201310.LN D.RL05.DSTvSCS1401.nc
General description	The GRACE twin satellites, launched 17 March 2002, are making detailed measurements of Earth's gravity field and revolutionizing investigations about Earth's water reservoirs, over land, ice and oceans. GRACE TELLUS provides user-friendly data grids, with most corrections applied, to analyze changes in the mass of the Earth's hydrologic components.
Version	RL05.DSTvSCS1401
doi	-
Global/Regional/Site	Global
Spatial resolution	1°x1°
Temporal resolution	Monthly
Period covered	2002-2013
Data policy	Please acknowledge: GRACE land data were processed by Sean Swenson, supported by the NASA MEaSUREs Program, and are available at <a href="http://grace.jpl.nasa.gov">http://grace.jpl.nasa.gov</a> and cite Landerer F.W. and S. C. Swenson, Accuracy of scaled GRACE terrestrial water storage estimates. <i>Water Resources Research</i> , Vol 48, W04531, 11 PP, doi:10.1029/2011WR011453 2012. Swenson, S. C. and J. Wahr, Post-processing removal of correlated errors in GRACE data, <i>Geophys. Res. Lett.</i> , 33, L08402, doi:10.1029/2005GL025285, 2006.
Comments	Each monthly GRCTellus grid represents the surface mass deviation for that month relative to the baseline average over Jan 2004 to Dec 2009. If you compare against other data or model, it is critical that anomalies relative to the same time-average are compared. This is simple to do: for example, if the new baseline is 2004-2006, average the GRCTellus grids over 1/2004 to 12/2006, and subtract this average grid from all other monthly grids. <u>Units:</u> cm
Caveat	-

References	Landerer F.W. and S. C. Swenson, Accuracy of scaled GRACE terrestrial water storage estimates. Water Resources Research, Vol 48, W04531, 11 PP, doi:10.1029/2011WR011453 2012. Swenson, S. C. and J. Wahr, Post-processing removal of correlated errors in GRACE data, Geophys. Res. Lett., 33, L08402, doi:10.1029/2005GL025285, 2006.
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## 2.13 River discharge

### 2.13.1 Global product

IPSL contact person	Jan Polcher (jan.polcher@lmd.jussieu.fr)
Other contact person	
Source	GRDC : <a href="http://www.bafg.de/GRDC/EN/Home/homepage_node.html">http://www.bafg.de/GRDC/EN/Home/homepage_node.html</a>
IPSL server/path/filename	Climserv, Ciclad : /bdd/ORCHIDEE_Forcing/Validation/GRDC/
General description	River discharge at 5723 station around the world. The length of the record is very variable. But the analysis code will use the river_desc.nc file from ORCHIDEE to identify, based on the simulation resolution and time span, how many stations can be used to validate the river discharge.
Version	Received in June 2014
doi	
Global/Regional/Site	Global
Spatial resolution	Station data
Temporal resolution	Monthly
Period covered	1807 up to current
Data policy	Cannot be shared
IPSL contact person	Jan Polcher (jan.polcher@lmd.jussieu.fr)
Other contact person	
Source	GRDC : <a href="http://www.bafg.de/GRDC/EN/Home/homepage_node.html">http://www.bafg.de/GRDC/EN/Home/homepage_node.html</a>

### 2.13.2 Regional product (Amazon)

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Josyane Ronchail <josyane.ronchail@locean-ipsl.upmc.fr>
Source	ORE HYBAM. Personal communication with Josyane Ronchail.
IPSL server/path/filename	climserv: homedata/mguimber/DONNEES_VALIDATION_ORCH/DEBIT/river_discharge_HYBAM.zip
General description	River discharge for 38 gauge stations over the Amazon basin from the ORE HYBAM database. Discharge data has been gathered and complemented within the frame of the ORE (Environmental Research Observatory) HYBAM (Geodynamical, hydrological and biogeochemical control of erosion/alteration and material transport in the Amazon River



	basin – <a href="http://www.ore-hybam.org/">http://www.ore-hybam.org/</a> ), a partnership which associates the meteorological and hydrological services of the Amazonian countries (Agencia Nacional de Aguas Water National Office/ANA in Brazil ( <a href="http://www2.ana.gov.br/">http://www2.ana.gov.br/</a> ), Servicio Nacional de Meteorologia e Hidrologia/National Meteorology and Hydrology Service/SENAMHI in Peru ( <a href="http://www.senamhi.gob.pe/">http://www.senamhi.gob.pe/</a> ) and Bolivia ( <a href="http://www.senamhi.gob.bo/">http://www.senamhi.gob.bo/</a> ), Instituto Nacional de Meteorologia e Hidrologia / National Meteorology and Hydrology Institute/INAMHI in Ecuador ( <a href="http://www.inamhi.gov.ec/">http://www.inamhi.gov.ec/</a> )) and the French Institute of Research for Development (IRD – <a href="http://www.ird.fr/">http://www.ird.fr/</a> ). The rating curves have been determined using the stream gauging measurements, recently with Acoustic Doppler Current Profiler (ADCP), and have been used to convert the water level series into discharge data. The daily water level data were corrected when necessary, with missing values estimated by correlation with data from upstream or downstream stations.
Version	May 2012
doi	-
Global/Regional/Site	Amazon basin
Spatial resolution	Site distributed over the Amazon basin
Temporal resolution	Monthly
Period covered	1967 to 2011
Data policy	Inform the author of the intended use. The data user should acknowledge the ORE HYBAM.
Comments	Put in netcdf format by Matthieu Guimberteau. <u>Units:</u> m <sup>3</sup> /s
Caveat	-
References	Guimberteau M., Drapeau G., Ronchail J., Sultan B., Polcher J., Martinez J.-M., Prigent C., Guyot J.-L., Cochonneau G., Espinoza J. C., Filizola N., Fraizy P., Lavado W., De Oliveira E., Pombosa R., Noriega L., and Vauchel P. (2012): Discharge simulation in the sub-basins of the Amazon using ORCHIDEE forced by new datasets, <i>Hydrol. Earth Syst. Sci.</i> , 16, 911-935, <a href="https://doi.org/10.5194/hess-16-911-2012">doi:10.5194/hess-16-911-2012</a>

## 2.14 Snow

### 2.14.1 Snow extent

IPSL contact person	Catherine Ottlé < <a href="mailto:Catherine.Ottlé@lsce.ipsl.fr">Catherine.Ottlé@lsce.ipsl.fr</a> >
Other contact person	
Source	<a href="http://www.globsnow.info/se/">http://www.globsnow.info/se/</a>
IPSL server/path/filename	
General description	
Version	
doi	

Global/Regional/Site	
Spatial resolution	
Temporal resolution	daily
Period covered	2003-2012
Data policy	
Comments	
Caveat	
References	

### 2.14.2 Snow water equivalent

IPSL contact person	Catherine Ottlé <Catherine.Ottlé@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://www.globsnow.info/swe/">http://www.globsnow.info/swe/</a>
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	
Spatial resolution	
Temporal resolution	
Period covered	1979-2013
Data policy	
Comments	
Caveat	
References	

### 2.15 Freeze/thaw dates

IPSL contact person	Catherine Ottlé <Catherine.Ottlé@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://epic.awi.de/30305/">http://epic.awi.de/30305/</a>
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	
Spatial resolution	
Temporal resolution	
Period covered	2010
Data policy	
Comments	
Caveat	
References	

## 2.16 Albedo

### 2.16.1 GlobAlbedo product

IPSL contact person	Catherine Ottlé <Catherine.Ottlé@lsce.ipsl.fr>
Other contact person	
Source	<a href="http://www.globalbedo.org/">http://www.globalbedo.org/</a>
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	global
Spatial resolution	
Temporal resolution	
Period covered	1998-2011
Data policy	
Comments	
Caveat	
References	

### 2.16.2 MODIS albedo product

IPSL contact person	Sebastiaan Luyssaert
Other contact person	
Source	
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	
Spatial resolution	
Temporal resolution	
Period covered	
Data policy	
Comments	
Caveat	
References	

### 2.16.3 GLASS product

IPSL contact person	Catherine Ottlé
Other contact person	
Source	<a href="http://glcf.umd.edu/data/abd/">http://glcf.umd.edu/data/abd/</a>
IPSL server/path/filename	
General description	
Version	
doi	doi:10.6050/glass863.3001.db

Global/Regional/Site	global
Spatial resolution	0.05° 1981-1999 (AVHRR), 1km 2000-2010 (MODIS)
Temporal resolution	8-day
Period covered	1981-2010
Data policy	
Comments	
Caveat	
References	<p>Citation Format: Shunlin Liang, Qiang Liu. Global Land Surface Products: Albedo Product Data Collection(1985-2010),Beijing Normal University, 2012, doi:10.6050/glass863.3001.db</p> <p>Associated Peer-Reviewed Publication (cite these publications whenever the data are used):</p> <p>Qu, Y., Liu, Q., Liang, S., Wang, L., Liu, N., &amp; Liu, S. (2013). Improved direct-estimation algorithm for mapping daily land-surface broadband albedo from MODIS data. IEEE Transactions on Geoscience and Remote Sensing, doi:10.1109/TGRS.2013.2245670</p>

## 2.17 Surface temperature

IPSL contact person	Catherine Ottlé <Catherine.Ottlé@lsce.ipsl.fr>
Other contact person	
Source	
IPSL server/path/filename	
General description	
Version	
doi	
Global/Regional/Site	global
Spatial resolution	
Temporal resolution	
Period covered	
Data policy	
Comments	
Caveat	
References	

## 2.18 Radiative fluxes

IPSL contact person	Frédérique Chéruy <Frederique.Cheruy@lmd.jussieu.fr>
Other contact person	
Source	<a href="http://ceres.larc.nasa.gov/cmip5_data.php">http://ceres.larc.nasa.gov/cmip5_data.php</a>
IPSL server/path/filename	obelix:/home/satellites5/maignan/ORCHIDEE/EVALUATION/CERES_EBAF-Surface_Edition2.8/CERES_EBAF-Surface_Edition2.8_200003-201405.nc
General description	
Version	
doi	

Global/Regional/Site	
Spatial resolution	1° x 1° [89.5°S-89.5°N ; 0.5°E-359.5°E]
Temporal resolution	
Period covered	
Data policy	
Comments	Send reprint to Langley ASDC.
Caveat	
References	

## 2.19 Precipitation

IPSL contact person	Matthieu Guimberteau <matthieu.guimberteau@lsce.ipsl.fr>
Other contact person	Guillaume Drapeau <gui.drap@gmail.com> and Josyane Ronchail <josyane.ronchail@locean-ipsl.upmc.fr>
Source	Personal communication with Josyane Ronchail and Guillaume Drapeau
IPSL server/path/filename	climserv: /homedata/mguimber/DONNEES_VALIDATION_ORCH/PRE CIP/ORE_HYBAM_precip.zip
General description	Within the frame of the ORE HYBAM, daily rainfall data from 1488 rain gauges have been gathered, from 1975 to 2009. A quality control based on the application of the Regional Vector Method (RVM) on the rainfall values (Espinoza et al., 2009b) was then performed over the Amazon River basin. RVM enables to discriminate stations with lowest probability of errors in their series. Finally, 752 rain gauges approved by RVM were retained, with data covering more than five-year continuous periods. In-situ observations were afterward spatially interpolated to the 1° x1° resolution. Ordinary kriging was performed to generate an observation-based gridded daily rainfall dataset.
Version	6 <sup>th</sup> August 2011
doi	-
Global/Regional/Site	Amazon basin
Spatial resolution	1° x1°
Temporal resolution	Daily
Period covered	1980-2009
Data policy	Inform the authors (Guimberteau, Drapeau and Ronchail) of the intended use. Cite the reference papers.
Comments	Put in netcdf format by Guillaume Drapeau <u>Units</u> : mm/day
Caveat	-
References	Guimberteau M., Drapeau G., Ronchail J., Sultan B., Polcher J., Martinez J.-M., Prigent C., Guyot J.-L., Cochonneau G., Espinoza J. C., Filizola N., Fraizy P., Lavado W., De Oliveira E., Pombosa R., Noriega L., and Vauchel P. (2012): Discharge simulation in the sub-basins of the Amazon using ORCHIDEE forced by new datasets, <i>Hydrol. Earth Syst. Sci.</i> , 16, 911-935, <a href="https://doi.org/10.5194/hess-16-911-2012">doi:10.5194/hess-16-911-2012</a>

