

# **Footprint Data**

Search "GEDI I2a data dictionary"

Short Name: GEDI02\_A

GEDI L2A Elevation and Height Metrics Data Global Footprint Level V002

https://lpdaac.usgs.gov/documents/982/gedi\_l2a\_dictionary\_P003\_v2.html

PublicationURL / VIEW RELATED INFORMATION / GENERAL DOCUMENTATION

The data dictionary provides additional information on the Science Dataset (SDS) layers.

# **Footprint Data**

Open data dictionary for the entire GEDI L2A Data Structure

Dimension Variable Descrip	tion				
MT Number	of about				
Group: / short_name	(Atribute)	Torre			
Group: (METADATA/Detended	(Varieties)	GED L2A			
abstract	(Atribute)	The OCOLL2A standard data product	contains precise latitude, long	itude, elevation, caropy height and surface energy metrics	
characterSet	(Atribute)		The GCDL Lab standard data product contains produc lettude, longitude, clivation, compay height and surface energy metrics and a standard from return waveforms for the various reflecting surfaces located within each laser footprint.  [87]		
onaracontate onadonDate	(Atributa)	File creation date			
ondt	(Atribute)				
U MAI	(Value)	The software that generates the LLA product was designed and implemented within the GEDI Science Data Processing Si the NASA Codder Specer Flight Centre in Obserbedt, Maryland in collaboration with the LNS (Land. Vegetation, and los Faum and the University of Maryland.			
Soliene	(Minhute)	Original file name			
language	(Atribute)	eng			
originato/OrganizationName	(Atributa)	GSFC GEDI-SDFS > GEDI Science I	Data Processing System and U	Inversity of Maryland	
POEVersion	(Atribute)	Product generating executive SQPS in	wlease ID		
purpose	(Atribute)	The purpose of the L2A deteset is to	provide waveform interpretatio	n and extracted products from each GEDI waveform. This metrics (describing canopy vertical structure, for example), and	
		many other interpreted products from	the return waveforms.	mores (and nonly carely virtua decision, no example), and	
shortkame	(Atributa)	GEOLIAN			
spatialRepresentationType	(Atributa)	along task			
slakes	(Atribute) (Atribute)	er Geing geosder Michamation			
topicCatagory		geoscientificinismation Universally unique identifier (UUC) for this file			
uuld VenkontD	(Atributa) (Atributa)	University unique identifier (UUD) for this file SDPS DAAC release ID			
Group: (BEAMXXXX	(Acceptance)	JEFR DIOL HEIGH D	SCPS DAAC release ID		
description	(Atribute)	"Coverage beam" or "Full power bear			
Label	Datatype (Dimensione)	long_name	units	description	
bears	(Dimensions)	tean	source	Beam identifier	
	UNT16 (MT)		1.18		
shannel	UNTS (MT)	channel		Channel identifier	
degrade_flag	(Mf)	degrade_flag	118	Also year values indicate the shot account during a firm	
(mywie_Say	UNTS (MT)	degrade_Eng	L18	Non-zero values indicate the shall conside dispraided particle. Anno curo less digit inclusive dispraided attacks, it is one near one self-discretions despected between years of the continues o	
della_Sina	FLOAT64 (MT)	della_tiree	seconds since 2018-01-	Transmit time of the shot, reeasured in seconds from the	
	(MT)		seconds since 2018-01- 01 L18	Transmit time of the shut, reseaured in seconds from the master, time, epoch, by adding the offset contained within MEAMOODOLINE/shut procedure facilities, lime, the time in GPS seconds relative to the GPS epoch can be computed. Equivalent to IEEE/MODOLINE/shut procedure (IEEE/MODOLINES) pro-REAMOODOLINESSEr (No. 1).	
digital_elevation_model	PLOAT32 (MT)	digital_elevation_model	Ča .	TanDEM X elevation at GEQ1 forgrent location	
	(MT)				
digital_elevation_model_etm.	FLOAT32 (MT)	digital_elevation_model_wtm	m L10	SRTM elevation at GEDI footprint location	
der_highestretum	FLOAT32 (MT)	elev_highestreture	m.	elevation of highest detected return relative to reference eligenist	
der_lowestrade	(MT)	aley_lowestmode		ellipsoid	
dov_lowestnade	FLOAT32 (MT)	stev_towed/node		elevation of center of lowest mode relative to reference ellipsoid	
devation_biss_flag	UNITO (MT)	elevation_bias_flag		Dievations potentially affected by 4bin (~60cm) ranging error	
desafor bird eror		elevation bin0 error	-	Error in elevation of bin 0	
	FLOAT32 (MT)		E18		
energy_total	FLOAT32 (MT)	energy_total	counts	Integrated counts in the rotum waveform relative to the mean noise level	
at highestroture		lat hishestratum	degrees	Latitude of historial detected return	
	FLOAT64 (MT)				
lat_lowestmode	FLOATISS (MT)	M_lowestnade	degrass	Latitude of center of lowest mode	
rans (hid shalls)	FLOAT32	Millude_bird_ever	degrees L1B	Sincer in tablacks of bin 0	
	(MT)				
lon_highestreture	FLOAT64 (MT)	lon_highestratum	degrees	Longitude of highest detected return	
lon_lowestmode	FLOATISA (MT)	lon_lowestmode	degrees	Longitude of center of lowest mode	
longitude_bin0_error		Error in longitude of bin 0		Error on longitude_bird.	
	FLOAT32 (MT)		degrees L18		
mester_has	PLOATISE (MT)	master_free	5 L18	Mester time, fractional part, master, intrinsabler, frac is equivalent to 6EAM00000(peolocation/delta_time and ////////////////////////////////////	
master_int	UNT32 (MT)	master_int	18	Master Sme, integer part. Seconds since meater time, epoch master, intrmester, frec is equivalent to REFAEDODOS(pseconds) related as the and (REFAEDODOS(geophys_contributis_time.)	
near_sea_surface	FLOAT32 (MT)	mean_sea_surface	III L10	Mean sea surface height above the WGSH4 ellipsoid, includes the goold, interpolated at latitude_bin0 and longitude_bin0 from DTU15.	
num_detectedmodes	UNTS (MT)	num_detectedmodes	1	Number of detected modes in researchers.	
qualty_flag	UNTS (MT)	quality_flag		Flag simplifying selection of most useful data	
			1		
	FLOAT32 (MT,121)	1"	-	Relative height metrics at 1 % interval	
solected_algorithm	UNTS (MT)	selected_algorithm	-	ID of algorithm selected as identifying the lowest non-noise	
solected_reads		selected_mode	+	ID of mode selected as lowest non-noise mode	
	UNTS (MT)				
sonstivity	FLOAT32 (MT)	sensitivity		Maximizum canopy cover that can be penetrated considering the SNR of the wavefurm.	
shot_number	UNTSA	shot_number	+	the SNK of the waveform. Shot number	
	UNTS4 (MT)		L18		
solar_asimuth	FLOAT32 (MT)	solar_azimuth	L10	Solar asimuth	
solar, elevation	FLOAT32 (MT)	solar_elevation		Solar elevation	
		_	L10		
surface_flag Group: @EAMXXXXIanollary	UNTS (MT)	surface_flag	ľ	Indicates elev_lowestmode is within 200m of DBM or MSS	
Label	Datatype (Dimensions)	ting_name	units source	description	
	(Lamensions)		source		
Da_alg_count	UNTE	2 alg count		Number of L2A algorithm runs present in file	

del	Dutatype (Dimensions)	long_name	units source	description	
n, tighestretum, sN	FLOAT32 (MT)	elev_highestotum_sN		Elevation of the highest return detected using algorithm N, relative to reference ellipsoid	
ov_lowestmode_eN	FLOATS2 (MT)	elev_lowestmode_sN	-	relative to reference ellipsoid  Disvation of the center of the lowest mode detected using algorithm Nyelative to reference ellipsoid	
ov_lowestratum_sN	(MT) FLOATS2 (MT)	elev_lowestratum_sN		algorithm Nuntative to reference ellipsoid.  Elevation of lowest return detected using algorithm Nuniation reference ellipsoid.	
evation_fgft	FLOATES	elevation_gaussfit_sN		Its reference ellipsoid  Elevation corresponding to the center of a single gaussian	
ws_almodes_aN	(MT) ELOATES	sins almoss all		Direction corresponding to the center of a single gaussian fit to the waveform, relative to reference ellipsoid Directions of all modes detected using alsorithm N. relative	
	(MT.rs_max_mode_count)		-	to reference ellipsoid	
engy_lowestmode_sN	FLOAT32 (MT)	enengy_lowestmode_aN	counts	Energy of lowest mode, detected using algorithm N, in the waveform above the mean noise level	
_highestrature_eN	FLOAT64 (MT)	let_highestreturn_eN	degrees	Lettude of the highest return detected using algorithm N	
Jowestmode_sN	FLOAT64 (MT)	lat_lowestmode_sN	degrees	Latitude of the center of the lowest mode detected using allowithm N	
Joweshelum_aN	FLOAT64	let_iowestreturn_aN	degrees	Letitude of the lowest return detected using algorithm N	
Nude_fgft	(MT) FLOAT64	lethule_gaussit_eV	degrees	Latitude corresponding to the center of a single gaussian fit to the waveform	
h_almodes_aN	(MT) FLOAT64	leb_slimodes_sN	degrees	to the waveform  Lethodes of all modes detected using algorithm N	
_highestreture_aN	(MT/s max mode count) FLOX764	los_highestreture_aN	degrees	Longitude of the highest return detected using algorithm N	
	(MT)				
javestroie_aN	FLOX764 (MT)	los_lowestrode_aN	degrees	Longitude of the center of lowest mode detected using algorithm N	
_lowestretum_aN	FLOX764 (MT)	lon_lowestreturn_aN	degrees	Longitude of lowest return-detected using algorithmN	
rgtude_tgft	FLOXING ONT)	longitude_gauselt_alV	degrees	Longitude corresponding to the center of a single gaussian fit to the waveform	
ns_allmodes_aN	FLOATE4 Office max mode count)	loss_alireodes_aN	degrees	Longitudes of all modes detected using algorithmit	
m_detectedmedes_sN	(MT.x_max_mode_count) UNTR (MT)	num_detectedmodes_aN		Number of detected modes detected using algorithm M	
alty_fag_aN	UNTO	qualty fee all		Flag simplifying selection of most useful data	
an an	(MT)	D all	om	Relative height metrics at 1 % intervals using algorithm N (in	
,aN nativity_aN	(MT.101)			cm)	
	FLOXT32 (MT)	sonsitivity_sN		Maximinum canopy cover, using algorithm's, that can be penebated considering the SNR of the waveform	
st_number	UNTS6 (MT)	shot_number	L10	Shot number	
olo_mium_flag	UNTS (MT)	stale_return_flag	in	Fing from digitizer indicating the real-time pulse detection algorithm did not detect a return signal above its detection threshold within the entire 15 km search window. The pulse location of the previous shot was used to select the laterestered wavestorm.	
				threshold within the entire 15 km search window. The pulse location of the previous shot was used to select the	
oup: @EAMOOOXland_cove	- Orda			Internetured waveform	
del .	Datatype (Dimensions)	long_name	units source	description	
ndsat_treecover	(Dimensions) FLOA764	Landsat tree canopy cover		Tree cover in the year 2010, defined as canopy closure for al	
	(MT)		percent Ownled from treesswer2010_v3 geosff tiles	True cover in the year 2010, defined as canopy closure for all vegetation taller than fire in height (Harasen et al.). Encoded as a percentage per output grid set.	
ndsat_water_persistence	UNTS (MT)	Landsat water pensistence	Derhed	The penser UMD GLAD Landest elemenations with disselled surface water between 2018 and 2019. Values > 60 usually represent permanent water, while values > 10 represent permanent land.	
of off fleg	UNTS	Leafoffing	Derhand		
				leaf, or, day and pff, class, indicating if the observation was recorded during leaf-off conditions in deciduous furests and woodlands. 1 = leaf-off and 0 = leaf-on.	
-0.00	(MT)				
e de la comp	INTIS OMT	Leaf off day of year	Darked		
af_of_doy	INT16 (MT)			GEDI 1 km EASE 2.0 grid loaf off start day of year derived from the NPP VIRCS Oxidal Land Surface Phenology Product.	
		Leaf off day of year Leaf on day of year	Derhed Durked	GEDI 1 km EASE 2.0 grid loef off start day-of-year derived from the NPP VIRS Obbal Land Surface Phenology Product.	
d_ol_day d_or_day d_or_apa	INT16 (MT)			SECT 1 In LASE 2.0 grid last off start day of year derived town the NPP VIRES Global Land Burdens Prendings Product.  SECT 1 In LASE 2.0 grid tealor and day of your derived town the NPP VIRES Global Land Surface Phenology Product.  Visig that indicates the expetition growing cycle for teaf or coherendors. Where are O'Eled Foodstors I.1 (Invier 1 to coherendors.)	
d of day	INT16 (MT) INT16 (MT)	Leaf on day of year	Durhed Oarhed	CEDI 1 km DASE 23 grid loel off stant day of year derived from the NPV MPRS (shibit Land Burface Phenology Ordicat.  GEDI 1 km BASE 23 grid leef on stant day of year derived from the NPV MPRS (shibit Land Stafes Phenology Phodost.  Product.  They grid indicates the vegetation growing cycle for leaf or observations. Values are 0 (leef-off conditions), 1 (leyfe 1) or 2 (leyfe 2).	
of_of_day  of_on_day  of_on_opda  oda_nonveptided	RCTSS (MT) RCTSS (MT) LINETE (MT) FLOATSSA (MT)	Leaf on day of year  Leaf on cycle  MODIS non-vegetated	Durked  Derked  percent Derked from MODEs positifies	CDD 1 to CASE 2 or get land of hand day of your derived hand to RFV MISS (about Land Bufferd Phending). Product.  CDD 1 to CASE 2 or get land on stant day of your derived tools be DFV MISS close Land Surface Phending. The DFV MISS close Land Surface Phending. The CASE 2 or get land on stant day of your derived tools be DFV MISS close Land Surface Phending. The CASE 2 or get land place to the safe or chero-relation. Values are 0 (paid of conditions), 1 ((yold 1) or 20 yours 2).  Person on weighted from MODIS dids. Independent of landscare, buffer all products. Landscare.	
if_of_day  if_on_day  if_on_cyda  ods_conveptited  ods_conveptited_ad	INT15 (MT) INT15 (MT) UNITS (MT)	Leaf on day of year	Durhed Oarhed	CDS 1 to CASE 2.3 per laund the total quel year devoted have been 500°C 100°C	
of_of_day  of_on_day  of_on_opda  oda_nonveptided	RCTSS (MT) RCTSS (MT) LINETE (MT) FLOATSSA (MT)	Leaf on day of year  Leaf on cycle  MODIS non-vegetated	Derived  Derived  Derived  Derived tour MODIS percent Derived from MODIS percent Derived from MODIS percent	CDC1 In CNDE 2.0 get found the first gard years deviced being 5.9 PM (200 CDC). The control of	
of of day  if on day  if on cycle  ode provegatisted  ode provegatisted and  ode provegatisted  ode provegatisted	BATHS	Leaf on day of year  Leaf on cycle  MODES non-vegetabled  MODES is non-vegetabled standard deviation.  MODES to cover	Derhed  - Cerhed  - Cerhed  - Cerhed  - Derhed hon MODIS - percent - Derhed hon MODIS - genth likes - percent - Derhed from MODIS - genth likes - percent	COST 1 to CASE 2 Open found of the day of years devoted that the CASE 2 Open found of the CASE 2 Open found to the CASE 2	
of of day  if on day  if on cycle  ode provegatisted  ode provegatisted and  ode provegatisted  ode provegatisted	901755 90177 90177 90177 90177 90177 910,00764 917,000764 910,00764 910,00764	Leaf on day of year  Leaf on cyclin  MXD05 non-vegetated  MXD05 non-vegetated standard deviation.	Derived  Derived  Derived  Derived tour MODIS percent Derived from MODIS percent Derived from MODIS percent	COS 1 for COS 22 is get found with earlier by owner development of the COS 22 is get found in the COS	
if_of_day  if_on_day  if_on_cyda  ods_conveptited  ods_conveptited_ad	BATHS	Leaf on day of year  Leaf on cycle  MODES non-vegetabled  MODES is non-vegetabled standard deviation.  MODES to cover	Derhed  - Cerhed  - Cerhed  - Cerhed  - Derhed hon MODIS - percent - Derhed hon MODIS - genth likes - percent - Derhed from MODIS - genth likes - percent	COS 1 for COS 22 is get found with earlier by owner development of the COS 22 is get found in the COS	
of of day  of on day  of on day  of on day  of on day  of one day	NTTS ORT ORT  NTTS ORT  LOVE  FLOATE4 ORT  FLOATE4 ORT  FLOATE4 ORT  FLOATE4 ORT  FLOATE4	Leaf on days of year Leaf on cycles 800005 new-vegetated 800005 new-vegetated dawnhard elevendaria 800005 new conjusted dawnhard 800005 new conjusted dawnhard 800005 the conver	Ourhard  Ourhard  Corhard  Severet Severet has MODES gentifies Severet Severet MODES gentifies	GOS 1 for GOS 2.0 pt and out of what they gover denset flower. For Young 1 for the Company of th	
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of of other parties of the oth	6715 6717 6717 6717 6717 6717 6717 6717	Lad or day of year Lad or a spin Lad or a sp	Darked  - Onlined  - O	Gen 1 - 10-21 A plane of the pl	

shei	Datatype (Dimensions)	long_name	units source	description
gamplitude	FLOATISE (MT)	rx_gampitude	counts	Amplitude of single gaussian fit to the measureform
_gamplitude_error	ELONTRY	re_gamplitude_error	counts	Error in amphicule estimate for eingle gaussian fit to the
.goine	(MT)	rs_gbias	courts	Elas estimated in fitting a single gaussian to the covarience
_gbies_error	FLOAT32 (MT)	re gives error	counts	Error on or, gives parameter estimate
	FLOATS2 (MT)		touris	
Chapted	FLOATIS (MT)	rs_gebing		Chi squared value of gaussian fit to the resoundares
Lefre	UNTS (MT)	re_gfag		Georgian fil status fleg. I roomvergence in chi2 value, 2 roomvergence in parameter value, 3 roomvergence in chi2 and parameter values, dinconvergence in ordingonality, formalismum number of iterations matched, 54-feb tes small to further improvement), 7 roots to a small in to further repowerment), 8 rigid to a small tyle further responsement).
gturs	UNT16 (MT)	n_gten		Number of iterations to converge Gaussian fit to newsysform
.gec	FLOAT32 (MT)	n_gloc	ns.	Location (mean) of the Gaussian fit to the newsvelorm.
_gloc_error	FLOATEZ	n_gloc_error	rs.	Error on or_gloc parameter estimate
gwidh	(MT) FLOATIS	n, peith	rs	Midth (1 sigma) of the paussion fit to the newweform
_peldh_ensr	(MT) FLOATSQ (MT)	re_peidit_error		Error on re_gwidth perensitier entimete
roup (BEAMEODOXIV_Spans)	(MT) Elencitary			
their second	Datatype (Dimensions)	tong name	units	description
eft, mex func. evals	(Dimensions) NT64		Source	Maximum available of housing analytics whereal he filling in
oft, names			dg	Maximum number of function evolutions aboved for fitting the Gaussian/selended Gaussian to the reversiblem.
	INTER 1		elg	Maximum number of berations aboved for fitting the Geometric description to the researchem
g/li_bdenance	FLOATS4 1		dg dg	Convergence tolerance when filling the Caussianiestended Gaussian to the cowaveform.
_constraint_gamplitude_lower	FLOATS4		counts clg	Lower allowable limit for the ox Gaussian fit amplitude
_cominent_gamplitude_upper	FLOAT64		counts dg	Upper allowable limit for the nr Caussian fit amplitude
combaint gloc lower	FLOATS4	<del>                                     </del>	rs dg	Lower allowable limit for the nx Gaussian fit location
constraint_gloc_upper	FLOATIS4	-		Upper allowable limit for the nx Gaussian fit location
	FLOATIN		rs dg	Loan disable int for the v County theirth
_constraint_guidit_lower	1	1	m dg	
_constraint_gwidth_upper	FLOATIS4 1		ns dg	Upper allowable limit for the ox Gaussian fit width.
_estimate_bias	NT22		idg	If set to 1, a bias was estimated as part of the Gaussian fit. Set to 0 otherwise.
_nean_noise_level	FLOATS4		counts dg	If amplitude is less than this value, no gaussian fitting is performed to the covaveform.
anoohwidh	FLOATM		rs dg	Specifica width to easily to waveforms before fire axion
roup BEAUCODON James	1		dy	Strep
p Classess, vendon	(Attribute)	Version number of the aip Chassass softs	ware used to create the L2s	N She
p-Q-essess_pithesh	(Attribute)	Git commit hash of the exp-Q-assess soft	wars used to create the L2	A No
shel	Deletype (Dimensions)	long_name	orib source	description
ean	FLOAT32 (MT)	meanroise	counts	Mean noise estimate used in ne waveform interpretation algorithm
ean_54kadjusted	FLOAT32 (MT)	mean_64kar(usted	counts	Average amplitude within 10km search window with energy from covariethm removed
	LINETE	cosse_calibration_shot_flag		Fing indicating return suitablefor use in sensor persmeter estimation?
cean_cellbration_shot_flag	OM I			
	UNTE (MT)	Quality flag		Flag indicating thely invalid waveform (1 heald, 0 his valid)
own_collection_shot_flag unity_flag _connec_flag	UNTO (MT)	Ousity flag		Flags indicating various error conditions possible in
uity_fag _eccess_fag	UNTE (MT) UNT15 (MT)	rv_essess_flag	Non	Flags indicating various error conditions possible in exercistans
usity_fag ;_sooms_fag ;_dipair0	UNTS (MT) UNT15 (MT) UNT15 (MT)	or_meen_flag or_clipbind	- bins	Flage indicating various error conditions possible in reviewshare. Isosation of first waveform sample exceeding clip amplitude.
with flag _ seems_flag _ styleno _ styleno	UNTS (MT)  UNTS (MT)  UNTS (MT)  UNTS (MT)  UNTS (MT)	or_essess_flag or_oliphind or_oliphinsused	tins	Flags indicating various error conditions possible in caseardina.  boation of first waveform sample exceeding dip ampitude number of consecutive waveform samples affected by dipping.
usity_flag _escess_flag _diplor0 _diplor_count	UNTE (MT)  UNTTS (MT)  UNTTS (MT)  UNTTS (MT)  UNTTS (MT)  FLOATS2  (MT)	or_stores_flog or_olphind or_olphinsuret or_onergy	tins courts	Flags indicating various error conditions possible is construction.  Isolation of first severitim sample exceeding clip amplitude number of first severitim sample exceeding clip amplitude number of consecutive severitims samples affected by righting.  Soci energy of consectums, mean solar removed.
usity_flag _escess_flag _diplor0 _diplor_count	UNTE (MT)  UNTTS (MT)  UNTTS (MT)  UNTTS (MT)  UNTTS (MT)  FLOATS2  (MT)	or_essess_flag or_oliphind or_oliphinsused	tins	Flags indicating various error conditions possible is construction.  Isolation of first severitim sample exceeding clip amplitude number of first severitim sample exceeding clip amplitude number of consecutive severitims samples affected by righting.  Soci energy of consectums, mean solar removed.
with flag _ seems_flag _ styleno _ styleno	UNITE (MT) (MT) (UNITE) (MT) (UNITE) (MT) (UNITE) (MT) (UNITE) (MT) (UNITE) (MT) (FLOATEZ) (MT) (FLOATEZ) (MT) (MT)	or_stores_flog or_olphind or_olphinsuret or_onergy	tins courts	Flags indicating various error conditions possible in currently and the currently considered possible in currently control of first baselines assigned possible in current of currently assigned and possible in currently control of currently assigned and currently currently control of currently currently currently currently currently currently currently currently first.
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megy, on	FLGATIQ (MT)	energy_sen	rounis	total energy of smoothed waveform
tor, make	(MT) FLORENZ MT)	Fort_Streeted	courts	Energy west to constrigent elevation return energy
Instructionary		Introducen	men	enemy in Invest detected mode
neer .	FLGAT32 (MT)	nee	courb	mean-noise level used in algorithm
rear_en	FLGAT32 (MT)		courts	meannoise level user in apprens
	FLOATIS (MT)	mean_um min_delection_energy	counts	
min_detection_energy	FLGATS2 (MT)			imagrated area of the computed minimally-detectable goussian
min_delection_threshold	FLOATS2 (MT)	min_detection_threshold	courts	detection threshold used to compute the minimally detected gaussian
presión (	(MT)	prod	counts	peak amplitude of new wavefurm
pk,100	FLOATS2 (MT)	pt,m	counts	peak amplitude of amosthed waveform
or, algranting	UNITE (MT)	or_algorrhag		Flag indicating signal was detected and algorithm ran excessfully
n_nesides	(MT, NET)	rs_numidise	-	Viewstern bin numbers of integer persons of integrated energy from cumulative waveform (testion (2%) is topico (380%))
n_leanange	FLORITIS (MT/n_max_mode_count)	rs_teaveamps	counts	Fraction of integrated waveform at location of each detected mode
n_mobanys	FLCAT32 (MT/n_max_mode_count) FLCAT32 (MT/n_max_mode_count)	rs_modeange	counts	Amplitudes of each detected made within wavefurn
rx_modeenergytobolisc	FLOATS2 MT.m max mode count)	rx_modesnergytotodoc	counts	Total energy from the center of each-detected waveform mode to bolico
n_motourney	FLORTIS (MT/n_max_mode_count)	n_noblocalmeny	saurik	Energy between + E samples of each defected mode, mean- noise level semoned
n_molelookeegukoomean	FLORTIS (MT/s, max, mode, count)	rs_moldocalmerguelovemean	ments	Energy induses + 8 samples of easis defended mode
n_noblosistpe	FLOATS2 (MT.n. max. mode, count)	rv_modelocalsispe	counts	Signal trend within +- 6 samples of each detacted mode
n_molelon	FLCATIO (MT/n max mote count)	rs_molelous	15	Sample numbers of each detected mode (volative to bin E of servetore)
n, nodesidhe	FLOATS2 (MT/s; max_mode_count)	ry_nodewidths		sevetore)  1 sigms width estimates of each detected node in wavefurn.
n_nummodes		n_nummodes		Number of modes detected in waveform
M.M.	UNITS (MT) FLORTIS	st,sn	munis	Noise sharded discission of the amorthed waveform
search, and	PLOATSS (MT)	search_end		Sangle number indicating end of signal search
search_start	FLOATSS (MT)	search_start	-	Stangle number indicating start of signal search
selected mode	FLORTS2 (MT)	selected mode	-	IC of mode selected as lowest non-noise mode
selected_mode_flag	UNITS (MT)			
shit runter	UNITS (MT)	selected_mode_flag		Flag indicating status of selected_needs
	UNITS (MT)	shat_number	1.10	Shot number
snoshwidh	FLOATS2 (MT)	snootwide	-	width of gaussian function used to smooth noise sections of waveforms
smoothwidt , smoos	FLOATSQ (MT)	smoothwidt_pones		width of gaussian function used to smooth waveform between bollor and topion
skilder	FLGATIQ (MT)	sidder	essentel L 10	nobe standderf deviation used in algorithm
topics	FLOATS2 (MT)	topiac	counts	Sample number of highest-detected nature
tiplor_miss	UNITS (MT)	topics_miss		Fing indicating algorithm didn't detect valid topics value
cones	FLGAT32 (MT)	c3300		Sample number of center of lowest mode above nobe level
round	FLORITIO (MT)	arant	**	tocadion of center of highest mode above noise level nelative to binO of waveform
cones_eng	FLGAT32 (MT)	name auto	counts	amplitude of smoothed waveform at lowest detacted mode
across, localizately	FLOATIS (MT)	Janus, Josephoney	courts	energy of ited mode above local stope
Group: BEASSCOOKs process	ing_altituditary			
Label	Detatype (Dimensions)	long_name	units source	description
any freeh	FLGATIN	any firms	counts olg	Final ground return pulsa satission parameter
amput_limi0	FLORISE 1	amai Jiniti	enumbs etg	Final ground return pulsa satestion parameter
angua_linit)	FLOATS4	angval_linit)	counts cly	Final ground nature pulse selection parameter
beloodst_limit1	FLOR754	hodoodst_limit!		Find ground return pulse selection parameter
beloodst_link2	PLOATISE	bolloodet_limit2	m dg	Find ground return pulse selection parameter
boticalist_initit	FLOATIN	botkoder_limit)	es es	Final ground nature pulse selection parameter
curulativa_energy_minimum	FLOATS4	cursulative_energy_minimum	counts ctg	Final ground return pulse selection parameter
cumulative_energy_thresh	FLGA754	cumulative_energy_thresh	otg counts otg	Final ground return pulse selection parameter
snaths_satest_mode	MF32	erable_select_mode		First ground neuro pulse selection parameter
energy_thresh	FLOATS4	energy fresh	ody country	Final ground rature pulse selection parameter
preprocesor freehold	FLOATIN	proprocesor threshold	cty .	
pulse, sep_freeb	PLOATES	pulse_sep_fresh	ctg	initial search threshold multiplier to detect signal start and and Final ground return pulse selection parameter
nchecuse, front	FLOATSA	pulse, sep_livesh or_back_threshold	ing	
			ing	Frue, fixed, thresholded, this is the noise adder multiplier used to detect the lowest elevation signal. If use fixed, threshold is not, just, use the value as the threshold.
or_front_threshold	PLOA764	or_host_threshold	elg	If use fixed threshold=0, this is the noise sidder mulliplier used to felect the highest elevation signal. If use fixed threshold is non_caro, use the value as the threshold.
n_max_mode_count	NE64 1	ov_mex_mode_count	dg	Maximum number of modes saved for each footprint
n_searchion	FLORING	n_searchean	on obj	In combination with proprocessor, threshold, used to define area of executors to be searched by eligation. Sociation of control pulse-used by sensitivity algorithm.
tx_terrinel_location	FLOATS4	or_sentinel_location	ns ch	location of sentinel pulse-used by sensitivity algorithm
or_amouthing_width_loca	FLOATIN	n, anosting width Joss	ns ch	Width of guassian pulse convolved with waveform to reduce noise prior to topicobution identification
rs_amosting_midt_cores	FLGA754	re_amouting_aidth_errors	m dy	noise prior to topicobatics identification.  Width of guessian pube consolved with waveform to reduce noise prior to pube mode identification.
n, subbin, resolution	MT64	O_MODE_NE	dy dy	poise prior is pulse mode identification  Factor of increased vertical resolution relative to native searcharts resolution (~0.15 m).
n, we feet treates	M732	or use fixed thresholds	_	Navetoris resolution (~0.15 m). If YO, then use values in Front, Threshold and
			ity	If no, then use values in Frant, Threshold and Back, Threshold as the moise station multiplans used to dated. The highest and become devalue-reluces. If was, fined, Threshold in row, you, use the value in Court. Threshold and Reak. Threshold as its fineshold using

### **GEDI L2A Product Data Dictionary**

Dimension Variable	Description
MT	Number of shots

Group: /				
short_name	(Attribute)	GEDI_L2A		
Group: /METADATA/DatasetIder	ntification			
abstract	(Attribute)	The GEDI L2A standard data product contains precise latitude, longitude, elevation, canopy height and surface energy metrics extracted from return waveforms for the various reflecting surfaces located within each laser footprint.		
characterSet	(Attribute)	utf8		
creationDate	(Attribute)	File creation date		
credit	(Attribute)	The software that generates the L2A product was designed and implemented within the GEDI Science Data Processing System at the NASA Goddard Space Flight Center in Greenbelt, Maryland in collaboration with the LVIS (Land, Vegetation, and Ice Sensor) Team and the University of Maryland.		
fileName	(Attribute)	Original file name		
language	(Attribute)	eng		
originatorOrganizationName	(Attribute)	GSFC GEDI-SDPS > GEDI Science Data Processing System and University of Maryland		
PGEVersion	(Attribute)	Product generating executive SDPS release ID		
purpose	(Attribute)	The purpose of the L2A dataset is to provide waveform interpretation and extracted products from each GEDI waveform. This includes ground elevation, canopy top height, relative return energy metrics (describing canopy vertical structure, for example), and many other interpreted products from the return waveforms.		
shortName	(Attribute)	GEDI_L2A		
spatialRepresentationType	(Attribute)	along-track		
status	(Attribute)	onGoing		
topicCategory	(Attribute)	geoscientificInformation		
	( )			

## **Gridded Data**

### **GEDI L4B Gridded Aboveground Biomass Density, Version 2**

#### **Get Data**

Documentation Revision Date: 2022-04-26

Dataset Version: 2

### Summary

This Global Ecosystem Dynamics Investigation (GEDI) L4B product provides 1 km x 1 km (1 km, hereafter) estimates of mean aboveground biomass density (AGBD) based on observations from mission week 19 starting on 2019-04-18 to mission week 138 ending on 2021-08-04. The GEDI L4A Footprint Biomass product converts each high-quality waveform to an AGBD prediction, and the L4B product uses the sample present within the borders of each 1 km cell to statistically infer mean AGBD. The gridding procedure is described in the GEDI L4B Algorithm Theoretical Basis Document (ATBD). Patterson et al. (2019) describes the hybrid model-based mode of inference used in the L4B product. Corresponding 1 km estimates of the standard error of the mean are also provided in the L4B product. Uncertainty is due to both GEDI's sampling of the 1 km area (as opposed to making wall-to-wall observations) and the fact that L4A biomass values are modeled in a process subject to error instead of measured in a process that may be assumed to be error-free.

The GEDI instrument produces high-resolution laser ranging observations of the 3-dimensional structure of the Earth. GEDI was launched on December 5, 2018, and is attached to the International Space Station (ISS). GEDI collects data globally between 51.6° N and 51.6° S latitudes at the highest resolution and densest sampling of any light detection and ranging (lidar) instrument in orbit to date. The GEDI instrument consists of three lasers producing a total of eight beam ground transects, which consist of ~25 m footprint samples spaced approximately every 60 m along-track. The GEDI beam transects are spaced approximately 600 m apart on the Earth's surface in the cross-track direction, for an across-track width of ~4.2 km.

There are 10 data files in cloud-optimized GeoTIFF (\*.tif) format included in this dataset. Each file provides 1 km estimates of mean aboveground biomass density for the period 2019-04-18 to 2021-08-04 (mission week 19 to mission week 138). Also included are two companion files in Portable Document Format (\*.pdf).

- start\_mission\_wk\_end\_mission\_wk are starting and ending weeks of the GEDI mission included in the product. Mission week 19 ("MW019") starts 2019-04-18 and mission week 138 ("MW138") ends 2021-08-04
- ppds is the positioning and pointing determination system (PPDS) type (02 is final)
- release\_num is GOC SDS (software) release number,
- product ver is the granule production version.
- spatial\_resolution is "R01000M" (1 km), and
- variable is the gridded metric: MU=Mean; V1=Variance Component 1; V2=Variance Component 2; SE=Standard Error; PE=Percentage
   Standard Error; NC=Number of Clusters; NS=Number of Samples; QF=Quality Flag; PS=Prediction Stratum, MI=Mode of Inference (Table 1).



