Monthly Averaged Synoptic Radiative Fluxes and Clouds (SYN1deg-Month)

The SYN1deg product contains the monthly regional, zonal and global means of the CERES geostationary (GEO) enhanced temporally interpolated TOA fluxes, MODIS and 1-hourly GEO cloud properties, MODIS aerosols, and computed TOA, surface and in-atmospheric (profile) fluxes consistent with the observed TOA fluxes, clouds and aerosols. The Edition4A SYN1deg product has combined the Terra and Aqua CERES observed fluxes and cloud retrievals. The SYN1deg-Month product is distributed in monthly HDF-EOS files.

The constrained (adjusted) to the observed CERES TOA fluxes and the initial (untuned) profile (TOA, 70mb, 200mb, 500mb, and surface) longwave, shortwave, and window channel fluxes retrieved from the Langley Fu-Liou radiative transfer model are based on inputs from MODIS and GEO cloud properties stratified by 4 vertical layers, GEOS atmosphere and skin temperature, MATCH aerosol constituents, and MODIS spectral aerosol optical depths. The fluxes are given for pristine (clear-sky no-aerosol), clear-sky, all-sky-no-aerosol, and all-sky conditions. The initial and adjusted cloud, aerosols, GEOS precipitable water, humidity and skin temperatures are also given.

The SYN1deg product contains direct and diffuse shortwave surface fluxes. The product also contains direct and diffuse surface UVA, UVB, and photosynthetically active radiation (PAR) fluxes and surface UV Index for pristine, clear-sky, and total-sky conditions. Some of these surface fluxes are also given for all-sky-no-aerosol conditions.

A new addition to the SYN1deg is entropy parameters computed with the adjusted flux at TOA, in atmosphere, and the surface.

More information about the CERES products can be obtained on the CERES subsetter ordering web page (http://ceres.larc.nasa.gov/order_data.php)

A complete listing of metadata and science parameters for this data product can be found in Table 1, Table 2, and Table 3.

Level: 3
Frequency: 1/Month
Portion of Atmosphere Covered: Surface, In-Atmosphere, and TOA
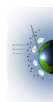
Time Interval Covered:
    File: 1 Month
    Record: 1 Month

Portion of Globe Covered:
    File: Entire Globe
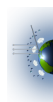   **Record:** 1.0-Deg Regional, Zonal or Global

Product Version:
    TRMM: N/A
    Terra: Edition4A
    Terra-Aqua: Edition4A
    Terra-NPP: Edition1A

Monthly Metadata

The types of Monthly metadata are summarized in Table 1 and contain information which need only be recorded once per product. The CERES metadata are listed in Appendix B. The Vgroups are listed in Table 2 and Table 3.

Table 1.   Monthly Metadata Summary

HDF Name	Description Table	Records	Number of Fields
CERES Baseline Header Metadata	Table B-1	1	36
CERES_metadata gridded data	Table B-2	1	14

Table 2.   List of the Vgroups for different Gridded Categories

Vgroup Number	Vgroup Name	Description	Number of Records
1	1_Degree_Regional	See Table 3	360,180
2	1_Degree_Zonal	See Table 3	180
3	Global	See Table 3	1

Table 3.   List of the Vgroups contained in the Regional
Monthly Averages

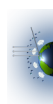| Regional Vgroup Number	Zonal & Global Vgroup Number	Vgroup Name (Regional, Zonal, Global)	Monthly Averages for Regional, Zonal and Global
1*		Regional Information*	See Table 5(a) & Table 5(b)
2	1	Observed_TOA_Fluxes_Regional	See Table 6(a) & Table 6(b)
3	2	Observed_Cloud_Layer_Properties_Regional	See Table 7(a) & Table 7(b)
4	3	Initial_ClearSky_Fluxes_Regional	See Table 8(a) & Table 8(b)
5	4	Initial_AllSky_Fluxes_Regional	See Table 9(a) & Table 9(b)
6	5	Initial_Pristine_Fluxes_Regional	See Table 10(a) & Table 10(b)
7	6	Initial_AllSkyNoAerosol_Fluxes_Regional	See Table 11(a) & Table 11(b)
8	7	Initial_TOA_Satellite_Emulated_WN_Fluxes_Regional	See Table 12(a) & Table 12(b)

SYN1deg-Month-3

Table 3.   List of the Vgroups contained in the Regional
Monthly Averages

Regional Vgroup Number	Zonal & Global Vgroup Number	Vgroup Name (Regional, Zonal, Global)	Monthly Averages for Regional, Zonal and Global
9	8	Initial_Input_Meteorological_Variables_Regional	See Table 13(a) & Table 13(b)
10	9	Adjusted_ClearSky_Flux_Profiles_Regional	See Table 14(a) & Table 14(b)
11	10	Adjusted_AllSky_Flux_Profiles_Regional	See Table 15(a) & Table 15(b)
12	11	Adjusted_Pristine_Flux_Profiles_Regional	See Table 16(a) & Table 16(b)
13	12	Adjusted_AllSkyNoAerosol_Flux_Profiles_Regional	See Table 17(a) & Table 17(b)
14	13	Adjusted_TOA_Satellite_Emulated_WN_Fluxes_Regional	See Table 18(a) & Table 18(b)
15	14	Adjusted_Input_Meteorological_Variables_Regional	See Table 19(a) & Table 19(b)
16	15	Adjusted_AllSky_Spectral_SW_Fluxes_Regional	See Table 20(a) & Table 20(b)
17	16	Adjusted_AllSky_Spectral_LW_Fluxes_Regional	See Table 21(a) & Table 21(b)
18	17	Adjusted_Surface_SW_Direct_Diffuse_Fluxes_Regional	See Table 22(a) & Table 22(b)
19	18	Adjusted_UVA_UVB_Fluxes_Regional	See Table 23(a) & Table 23(b)
20	19	Adjusted_PAR_Fluxes_Regional	See Table 24(a) & Table 24(b)
21	20	Adjusted_Entropy_Regional	See Table 25(a) & Table 25(b)
22*		Number_of_Observations_and_Flux_Computations_Regional*	See Table 26(a) & Table 26(b)

* Applicable to Regional data only
** Direct/Diffuse
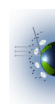
Monthly Regional, Zonal and Global Science Data

The Scientific Data Sets (SDS) are divided into tables which map to Vgroups of the same name. All of the Monthly regional science data are organized into the HDF-EOS Grid data type, which is shown in Table 4(a). All parameter (a) tables contain a list of the gridded parameters, which includes the field name, the data type, the units, the range, and the number of elements within each field for Regional data with notes provided under the table for Zonal and Global. The No. of Elements or Dimensions are defined in the first set of tables. All parameter (b) tables contain the list of SDS indices, which are grouped into monthly regional, zonal, and global means. The SDS name ends with either _reg, _zon, or _glob corresponding to regional, zonal, or global variable. Likewise, the long name ends with regional, zonal, or global. The first 2 dimensions noted, Nlat and Nlon, correspond to the CERES region index; for zonal, Nlat corresponds to the 1° latitudinal zone. Global parameters do not have an Nlat nor Nlon dimension. On a few parameters, the last dimension is Ncld and defines the cloud levels; Nlev and defines the atmospheric profile levels; Nswbnd and defines the SW spectral bands; or Nlwbnd and defines the LW spectral bands. This ordering is used by the C programming language and most HDF viewers, such as IDL. In FORTRAN, the dimensions are reversed such that the number of regions becomes the last dimension and the first dimension is the number of parameters in the SDS.

Table 4(a).   Nlat, Nlon dimensions that define the CERES equal-angle
1° latitude by 1° longitude grid

Dimension	No on indices			Definition
	Regional	Zonal	Global	
Nlat	180	180	0	Index #1 is defined at 89.5°N and #180 is at 89.5°S
Nlon	360	0	0	Index #1 is defined at 179.5°W and #360 is at 179.5°E

* The Zonal and Global parameters no longer support placeholders for Nlon and Nlon and Nlat, respectively.

Table 4(b).   Ncld dimension that defines the cloud layers

Cloud Layer Index Ncld	Cloud Layer
1	High
2	Upper Mid
3	Lower Mid
4	Low
5	Total

Table 4(c).   Nlev dimension that defines the atmospheric profile levels

Nlev	Atmospheric level
1	TOA (30 km)
2	70 mb
3	200 mb
4	500 mb
5	Surface

Table 4(d).   Nswbnd dimension that defines the SW spectral bounds

Nswbnd	SW Bands
1	Bands 1-7
2	Bands 8-10
3	Bands 11-13
4	Bands 14-18

Table 4(e).   Nlwbnd dimension that defines the LW spectral bounds

Nlwbnd	LW Bands
1	Bands 1-4
2	Bands 5-7
3	Bands 8-9
4	Bands 10-11
5	Bands 12

Table 5(a).   Regional Information.

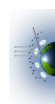| SDS Name	Long Name	DataType	Units	Range	No. Of Elements Regional
sza	Solar Zenith Angle	32-bit real	Degrees	1 .. 90	Nlon*Nlat
sfc_altitude	Surface Altitude above Sea Level	32-bit real	m	-1000 .. 10000	Nlon*Nlat
ocean_coverage	Ocean Percent Coverage	32-bit real	%	0 .. 100	Nlon*Nlat
snow_ice_coverage	Snow/Ice Percent Coverage	32-bit real	%	0 .. 100	Nlon*Nlat

Table 5(b).   SDS Index of Regional Information

SDS Name	Regional Monthly
Solar Zenith Angle	0
Surface Altitude above Sea Level	1
Ocean Percent Coverage	2
Snow/Ice Percent Coverage	3

Table 6(a).   Observed TOA Fluxes Regional

SDS Name (reg, zon, glob)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
obs_clr_toa_sw_reg	Observed Clear-Sky TOA SW Flux - Regional	32-bit real	W m^{-2}	0 .. 1400	Nlon*Nla
obs_clr_toa_lw_reg	Observed Clear-Sky TOA LW Flux - Regional	32-bit real	W m^{-2}	0 .. 500	Nlon*Nlat
obs_clr_toa_wn_reg	Observed Clear-Sky TOA WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat
obs_clr_toa_net_reg	Observed Clear-Sky TOA Net Flux - Regional	32-bit real	W m^{-2}	-425 .. 400	Nlon*Nlat
obs_clr_toa_alb_reg	Observed Clear-Sky TOA Albedo - Regional	32-bit real	N/A	0 .. 1	Nlon*Nlat
obs_all_toa_sw_reg	Observed All-Sky TOA SW Flux - Regional	32-bit real	W m^{-2}	0 .. 1400	Nlon*Nlat
obs_all_toa_lw_reg	Observed All-Sky TOA LW Flux - Regional	32-bit real	W m^{-2}	0 .. 500	Nlon*Nlat
obs_all_toa_wn_reg	Observed All-Sky TOA WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat
obs_all_toa_net_reg	Observed All-Sky TOA Net Flux - Regional	32-bit real	W m^{-2}	-400 .. 400	Nlon*Nlat
obs_all_toa_alb_reg	Observed All-Sky TOA Albedo - Regional	32-bit real	N/A	0 .. 1	Nlon*Nlat
toa_sw_insol_reg	TOA SW Insolation - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 6(b).   SDS Index of Observed TOA Fluxes Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Observed Clear-Sky TOA SW Flux	4	145	280
Observed Clear-Sky TOA LW Flux	5	146	281
Observed Clear-Sky TOA WN Flux	6	147	282
Observed Clear-Sky TOA Net Flux	7	148	283
Observed Clear-Sky TOA Albedo	8	149	284
Observed All-Sky TOA SW Flux	9	150	285
Observed All-Sky TOA LW Flux	10	151	286
Observed All-Sky TOA WN Flux	11	152	287
Observed All-Sky TOA Net Flux	12	153	288
Observed All-Sky TOA Albedo	13	154	289
TOA SW Insolation	14	155	290

Table 7(a).   Observed Cloud Properties for Four Cloud Layers

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
obs_cld_amount_reg	Observed Cloud Amount - Regional	32-bit real	Percent	0 .. 100	Nlon*Nlat*Ncld
obs_cld_od_reg	Observed Cloud Visible Optical Depth (from 3.7 um particle size retrieval) - Regional	32-bit real	N/A	0 .. 400	Nlon*Nlat*Ncld
obs_cld_od_linavg_reg	Observed Cloud Visible Optical Depth (linear averaged, from 3.7 um particle size retrieval) - Regional	32-bit real	N/A	0 .. 400	Nlon*Nlat*Ncld
obs_cld_ir_emiss_reg	Observed Cloud Infrared Emissivity - Regional	32-bit real	N/A	0 .. 2*	Nlon*Nlat*Ncld
obs_cld_lwp_reg	Observed Cloud Liquid Water Path (from 3. 7 um particle size retrieval) - Regional	32-bit real	g m^{-2}	0 .. 10000	Nlon*Nlat*Ncld
obs_cld_iwp_reg	Observed Cloud Ice Water Path (from 3.7 um particle size retrieval) - Regional	32-bit real	g m^{-2}	0 .. 10000	Nlon*Nlat*Ncld
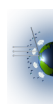
SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
obs_cld_top_press_reg	Observed Cloud Top Pressure - Regional	32-bit real	hPa	0 .. 1100	Nlon*Nlat* Ncld
obs_cld_top_temp_reg	Observed Cloud Top Temperature - Regional	32-bit real	K	100 .. 350	Nlon*Nlat* Ncld
obs_cld_top_hgt_reg	Observed Cloud Top Height - Regional	32-bit real	km	0 .. 20	Nlon*Nlat* Ncld
obs_cld_eff_press_reg	Observed Cloud Effective Pressure - Regional	32-bit real	hPa	0 .. 1100	Nlon*Nlat* Ncld
obs_cld_eff_temp_reg	Observed Cloud Effective Temperature - Regional	32-bit real	K	100 .. 350	Nlon*Nlat* Ncld
obs_cld_eff_hgt_reg	Observed Cloud Effective Height - Regional	32-bit real	km	0 .. 20	Nlon*Nlat* Ncld
obs_cld_base_press_reg	Observed Cloud Base Pressure - Regional	32-bit real	hPa	0 .. 1100	Nlon*Nlat* Ncld
obs_cld_base_temp_reg	Observed Cloud Base Temperature - Regional	32-bit real	K	100 .. 350	Nlon*Nlat* Ncld
obs_cld_base_hgt_reg	Observed Cloud Base Height - Regional	32-bit real	km	0 .. 20	Nlon*Nlat* Ncld
obs_cld_liq_radius_reg	Observed Cloud Liquid Particle Radius (from 3.7 um particle size retrieval) - Regional	32-bit real	um	0 .. 40	Nlon*Nlat* Ncld
obs_cld_ice_radius_reg	Observed Cloud Particle Phase (from 3.7 um particle size retrieval) - Regional	32-bit real	um	0 .. 300	Nlon*Nlat* Ncld
obs_cld_phase_reg	Observed Cloud Particle Phase (from 3.7 um particle size retrieval) - Regional	32-bit real	N/A	1 .. 2	Nlon*Nlat* Ncld

* Range check from 0 to 2 to compensate for roundoff error.
* No. of Elements for Zonal: Nlat*Ncld
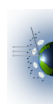* No. of Elements for Global: Ncld

Table 7(b).   SDS Index of Observed Cloud Properties for Four Cloud Layers

| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Observed Cloud Amount	15	156	291
Observed Cloud Visible Optical Depth (from 3.7 um particle size retrieval)	16	157	292
Observed Cloud Visible Optical Depth (linear averaged, from 3.7 um particle size retrieval)	17	158	293
Observed Cloud Infrared Emissivity	18	159	294
Observed Cloud Liquid Water Path (from 3. 7 um particle size retrieval)	19	160	295
Observed Cloud Ice Water Path (from 3.7 um particle size retrieval)	20	161	296
Observed Cloud Top Pressure	21	162	297
Observed Cloud Top Temperature	22	163	298
Observed Cloud Top	23	164	299
Observed Cloud Effective Pressure	24	165	300
Observed Cloud Effective Temperature	25	166	301
Observed Cloud Effective Height	26	167	302
Observed Cloud Base Pressure	27	168	303
Observed Cloud Base Temperature	28	169	304
Observed Cloud Base Height	29	170	305
Observed Cloud Liquid Particle Radius (from 3.7 um particle size retrieval)	30	171	306
Observed Cloud Particle Phase (from 3.7 um particle size retrieval)	31	172	307
Observed Cloud Particle Phase (from 3.7 um particle size retrieval)	32	173	308
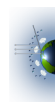
Table 8(a).   Initial_ClearSky_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_clr_sfc_sw_up_reg	Initial Clear-Sky Surface SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_clr_sfc_sw_dn_reg	Initial Clear-Sky Surface SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_clr_toa_sw_up_reg	Initial Clear-Sky TOA SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_clr_sfc_lw_up_reg	Initial Clear-Sky Surface LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_clr_sfc_lw_dn_reg	Initial Clear-Sky Surface LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_clr_toa_lw_up_reg	Initial Clear-Sky TOA LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat

* No. of Elements for Zonal: Nlat*Ns
* No. of Elements for Global: Ns

Table 8(b).   SDS Index of Initial_ClearSky_Fluxes_Regional

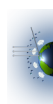| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial Clear-Sky Surface SW Up Flux	33	174	309
Initial Clear-Sky Surface SW Down Flux	34	175	310
Initial Clear-Sky TOA SW Up Flux	35	176	311
Initial Clear-Sky Surface LW Up Flux	36	177	312
Initial Clear-Sky Surface LW Down Flux	37	178	313
Initial Clear-Sky TOA LW Up Flux	38	179	314

Table 9(a).   Initial_AllSky_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_all_sfc_sw_up_reg	Initial All-Sky Surface SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_all_sfc_sw_dn_reg	Initial All-Sky Surface SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_all_toa_sw_up_reg	Initial All-Sky TOA SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_all_sfc_lw_up_reg	Initial All-Sky Surface LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_all_sfc_lw_dn_reg	Initial All-Sky Surface LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_all_toa_lw_up_reg	Initial All-Sky TOA LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 9(b).   SDS Index of Initial_AllSky_Fluxes_Regional

| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial All-Sky Surface SW Up Flux - Regional	39	180	315
Initial All-Sky Surface SW Down Flux - Regional	40	181	316
Initial All-Sky TOA SW Up Flux - Regional	41	182	317
Initial All-Sky Surface LW Up Flux - Regional	42	183	318
Initial All-Sky Surface LW Down Flux - Regional	43	184	319
Initial All-Sky TOA LW Up Flux - Regional	44	185	320
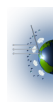
Table 10(a). Initial_Pristine_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_pristine_sfc_sw_up_reg	Initial Pristine Surface SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_pristine_sfc_sw_dn_reg	Initial Pristine Surface SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_pristine_toa_sw_up_reg	Initial Pristine TOA SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_pristine_sfc_lw_up_reg	Initial Pristine Surface LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_pristine_sfc_lw_dn_reg	Initial Pristine Surface LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_pristine_toa_lw_up_reg	Initial Pristine TOA LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 10(b).   SDS Index of Initial_Pristine_Fluxes_Regional

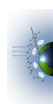| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial Pristine Surface SW Up Flux	45	186	321
Initial Pristine Surface SW Down Flux	46	187	322
Initial Pristine TOA SW Up Flux	47	188	323
Initial Pristine Surface LW Up Flux	48	189	324
Initial Pristine Surface LW Down Flux	49	190	325
Initial Pristine TOA LW Up Flux	50	191	326

Table 11(a). Initial_AllSkyNoAerosol_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_allnoaero_sfc_sw_up_reg	Initial All-Sky-NoAerosol Surface SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_allnoaero_sfc_sw_dn_reg	Initial All-Sky-NoAerosolSurface SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_allnoaero_toa_sw_up_reg	Initial All-Sky-NoAerosol TOA SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
init_allnoaero_sfc_lw_up_reg	Initial All-Sky-NoAerosol Surface LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_allnoaero_sfc_lw_dn_reg	Initial All-Sky-NoAerosol Surface LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat
init_allnoaero_toa_lw_up_reg	Initial All-Sky-NoAerosol TOA LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat

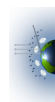* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 11(b).   SDS Index of Initial_AllSkyNoAerosol_Fluxes_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial All-Sky-NoAerosol Surface SW Up Flux	51	192	327
Initial All-Sky-NoAerosolSurface SW Down Flux	52	193	328
Initial All-Sky-NoAerosol TOA SW Up Flux	53	194	329
Initial All-Sky-NoAerosol Surface LW Up Flux	54	195	330
Initial All-Sky-NoAerosol Surface LW Down Flux	55	196	331
Initial All-Sky-NoAerosol TOA LW Up Flux	56	197	332

Table 12(a). Initial_TOA_Satellite_Emulated_WN_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_all_toa_wn_reg	Initial All-Sky TOA Satellite Emulated WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat
init_clr_toa_wn_reg	Initial Clear-Sky TOA Satellite Emulated WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 12(b).   SDS Index of Initial_TOA_Satellite_Emulated_WN_Fluxes_Regional

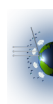| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial All-Sky TOA Satellite Emulated WN Flux - Regional	57	198	333
Initial Clear-Sky TOA Satellite Emulated WN Flux - Regional	58	199	334

Table 13(a). Initial_Input_Meteorological_Variables_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_pw_reg	Initial Precipitable Water – Regional	32-bit real	cm	0 .. 10	Nlon*Nlat
init_uth_reg	Initial Upper Tropospheric Relative Humidity – Regional	32-bit real	%	0 .. 150	Nlon*Nlat
init_sfc_alb_reg	Initial Surface Albedo – Regional	32-bit real	N/A	0 .. 1	Nlon*Nlat
init_skin_temp_reg	Initial Skin Temperature – Regional	32-bit real	K	175 .. 375	Nlon*Nlat
init_match_aod55_reg	Initial MATCH Aerosol Optical Depth at 0.55 um band – Regional	32-bit real	N/A	0 .. 8	Nlon*Nlat
init_match_aod84_reg	Initial MATCH Aerosol Optical Depth at 0.84 um band – Regional	32-bit real	N/A	0 .. 8	Nlon*Nlat
sfc_press_reg	Surface Pressure – Regional	32-bit real	hPa	0 .. 1100	Nlon*Nlat
col_o3_reg	Column Ozone – Regional	32-bit real	DU	0 .. 1000	Nlon*Nlat
init_cld_amount_reg	Initial Cloud Amount – Regional	32-bit real	%	0 .. 100	Nlon*Nlat*Ncld
init_cld_temp_reg	Initial Cloud Temperature – Regional	32-bit real	K	100 .. 350	Nlon*Nlat*Ncld
init_cld_od_reg	Initial Cloud Optical Depth – Regional	32-bit real	N/A	0 .. 400	Nlon*Nlat*Ncld
init_cld_lwp_reg	Initial Cloud Liquid Water Path – Regional	32-bit real	g m-2	0 .. 10000	Nlon*Nlat*Ncld
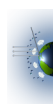
SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
init_cld_iwp_reg	Initial Cloud Ice Water Path – Regional	32-bit real	g m-2	0 .. 10000	Nlon*Nlat*Ncld

* No. of Elements for Zonal: Nlat or Nlat*Ncld
* No. of Elements for Global: 1 or Ncld

Table 13(b).　　SDS Index of Initial_Input_Meteorological_Variables_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Initial Precipitable Water	59	200	335
Initial Upper Tropospheric Relative Humidity	60	201	336
Initial Surface Albedo	61	202	337
Initial Skin Temperature	62	203	338
Initial MATCH Aerosol Optical Depth at 0.55 um band	63	204	339
Initial MATCH Aerosol Optical Depth at 0.84 um band	64	205	340
Surface Pressure	65	206	341
Column Ozone	66	207	342
Initial Cloud Amount	67	208	343
Initial Cloud Temperature	68	209	344
Initial Cloud Optical Depth	69	210	345
Initial Cloud Liquid Water Path	70	211	346
Initial Cloud Ice Water Path	71	212	347

Table 14(a). Adjusted_ClearSky_Flux_Profiles_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_clr_sw_up_reg	Adjusted Clear-Sky SW Up Flux - Regional	32-bit real	W m-2	0 .. 1500	Nlon*Nlat*Nlev
adj_clr_sw_dn_reg	Adjusted Clear-Sky SW Down Flux - Regional	32-bit real	W m-2	0 .. 1500	Nlon*Nlat*Nlev
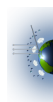
SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_clr_sfc_lw_up_reg	Adjusted Clear-Sky LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev
adj_clr_lw_dn_reg	Adjusted Clear-Sky LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev

* No. of Elements for Zonal: Nlat*Nlev
* No. of Elements for Global: Nlev

Table 14(b).   SDS Index of Adjusted_ClearSky_Flux_Profiles_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted Clear-Sky SW Up Flux	72	213	348
Adjusted Clear-Sky SW Down Flux	73	214	349
Adjusted Clear-Sky LW Up Flux	74	215	350
Adjusted Clear-Sky LW Down Flux	75	216	351

Table 15(a). Adjusted_AllSky_Flux_Profiles_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_all_sw_up_reg	Adjusted All-Sky SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_all_sw_dn_reg	Adjusted All-Sky SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_all_sfc_lw_up_reg	Adjusted All-Sky LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev
adj_all_lw_dn_reg	Adjusted All-Sky LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev

* No. of Elements for Zonal: Nlat*Ns
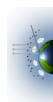* No. of Elements for Global: Ns

Table 15(b).   SDS Index of Adjusted_AllSky_Flux_Profiles_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted All-Sky SW Up Flux	76	217	352
Adjusted All-Sky SW Down Flux	77	218	353
Adjusted All-Sky LW Up Flux	78	219	354
Adjusted All-Sky LW Down Flux	79	220	355

Table 16(a). Adjusted_Pristine_Flux_Profiles_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_pristine_sw_up_reg	Adjusted Pristine SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_pristine_sw_dn_reg	Adjusted Pristine SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_pristine_sfc_lw_up_reg	Adjusted Pristine LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev
adj_pristine_lw_dn_reg	Adjusted Pristine LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev

* No. of Elements for Zonal: Nlat*Nlev
* No. of Elements for Global: Nlev

Table 16(b).   SDS Index of Adjusted_Pristine_Flux_Profiles_Regional

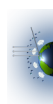| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted Pristine SW Up Flux	80	221	356
Adjusted Pristine SW Down Flux	81	222	357
Adjusted Pristine LW Up Flux	82	223	358
Adjusted Pristine LW Down Flux	83	224	359

Table 17(a). Adjusted_AllSkyNoAerosol_Flux_Profiles_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_allnoaero_sw_up_reg	Adjusted All-Sky-NoAerosol SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_allnoaero_sw_dn_reg	Adjusted All-Sky-NoAerosol SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nlev
adj_allnoaero sfc_lw_up_reg	Adjusted All-Sky-NoAerosol LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev
adj_allnoaero_lw_dn_reg	Adjusted All-Sky-NoAerosol LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlev

* No. of Elements for Zonal: Nlat*Nlev
* No. of Elements for Global: Nlev

Table 17(b).   SDS Index of Adjusted_AllSkyNoAerosol_Flux_Profiles_Regional

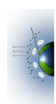| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted All-Sky-NoAerosol SW Up Flux	84	225	360
Adjusted All-Sky-NoAerosol SW Down Flux	85	226	361
Adjusted All-Sky-NoAerosol LW Up Flux	86	227	362
Adjusted All-Sky-NoAerosol LW Down Flux	87	228	363

Table 18(a). Adjusted_TOA_Satellite_Emulated_WN_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_all_toa_wn_reg	Adjusted All-Sky TOA Satellite Emulated WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat
adj_clr_toa_wn_reg	Adjusted Clear-Sky TOA Satellite Emulated WN Flux - Regional	32-bit real	W m^{-2}	0 .. 200	Nlon*Nlat

* No. of Elements for Zonal: Nlat*Ns
* No. of Elements for Global: Ns

Table 18(b).   SDS Index of Adjusted_TOA_Satellite_Emulated_WN_Fluxes_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted All-Sky TOA Satellite Emulated WN Flux	88	229	364
Adjusted Clear-Sky TOA Satellite Emulated WN Flux	89	230	365

Table 19(a). Adjusted_Input_Meteorological_Variables_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_pw_reg	Adjusted Precipitable Water - Regional	32-bit real	cm	0 .. 10	Nlon*Nlat
adj_uth_reg	Adjusted Upper Tropospheric Relative Humidity - Regional	32-bit real	%	0 .. 150	Nlon*Nlat
adj_sfc_alb_reg	Adjusted Surface Albedo - Regional	32-bit real	N/A	0 .. 1	Nlon*Nlat
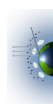
SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_skin_temp_reg	Adjusted Skin Temperature - Regional	32-bit real	K	175 .. 375	Nlon*Nlat
adj_match_aod55_reg	Adjusted MATCH Aerosol Optical Depth at 0.55 um band - Regional	32-bit real	N/A	0 .. 8	Nlon*Nlat
adj_cld_amount_reg	Adjusted Cloud Amount - Regional	32-bit real	%	0 .. 100	Nlon*Nlat*Ncld
adj_cld_temp_reg	Adjusted Cloud Temperature - Regional	32-bit real	K	100 .. 350	Nlon*Nlat*Ncld
adj_cld_od_reg	Adjusted Cloud Optical Depth - Regional	32-bit real	N/A	0 .. 400	Nlon*Nlat*Ncld
adj_cld_lwp_reg	Adjusted Cloud Liquid Water Path - Regional	32-bit real	g m-2	0 .. 10000	Nlon*Nlat*Ncld
adj_cld_iwp_reg	Adjusted Cloud Ice Water Path - Regional	32-bit real	g m-2	0 .. 10000	Nlon*Nlat*Ncld

* No. of Elements for Zonal: Nlat or Nlat*Ncld
* No. of Elements for Global: 1 or Ncld

Table 19(b).   SDS Index of Adjusted_Input_Meteorological_Variables_Regional

| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted Precipitable Water	90	231	366
Adjusted Upper Tropospheric Relative Humidity	91	232	367
Adjusted Surface Albedo	92	233	368
Adjusted Skin Temperature	93	234	369
Adjusted MATCH Aerosol Optical Depth at 0.55 um band	94	235	370
Adjusted Cloud Amount	95	236	371
Adjusted Cloud Temperature	96	237	372
Adjusted Cloud Optical Depth	97	238	373
Adjusted Cloud Liquid Water Path	98	239	374
Adjusted Cloud Ice Water Path	99	240	375
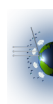
Table 20(a).   Adjusted_AllSky_Spectral_SW_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_all_toa_spec_sw_dn_reg	Adjusted All-Sky TOA Spectral SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nswbnd
adj_all_toa_spec_sw_up_reg	Adjusted All-Sky TOA Spectral SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nswbnd
adj_all_sfc_spec_sw_dn_reg	Adjusted All-Sky Surface Spectral SW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nswbnd
adj_all_sfc_spec_sw_up_reg	Adjusted All-Sky Surface Spectral SW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat*Nswbnd

* No. of Elements for Zonal: Nlat*Nswbnd
* No. of Elements for Global: Nswbnd

Table 20(b).   SDS Index of Adjusted_AllSky_Spectral_SW_Fluxes_Regional

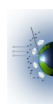| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted All-Sky TOA Spectral SW Down Flux	100	241	376
Adjusted All-Sky TOA Spectral SW Up Flux	101	242	377
Adjusted All-Sky Surface Spectral SW Down Flux	102	243	378
Adjusted All-Sky Surface Spectral SW Up Flux	103	244	379

Table 21(a). Adjusted_AllSky_Spectral_LW_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
adj_all_toa_spec_lw_up_reg	Adjusted All-Sky TOA Spectral LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlwbnd
adj_all_sfc_spec_lw_up_reg	Adjusted All-Sky Surface Spectral LW Up Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlwbnd
adj_all_sfc_spec_lw_dn_reg	Adjusted All-Sky Surface Spectral LW Down Flux - Regional	32-bit real	W m^{-2}	0 .. 850	Nlon*Nlat*Nlwbnd

* No. of Elements for Zonal: Nlat*Nlwbnd
* No. of Elements for Global: Nlwbnd

Table 21(b).   SDS Index of Adjusted_AllSky_Spectral_LW_Fluxes_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Adjusted All-Sky TOA Spectral LW Up Flux	104	245	380
Adjusted All-Sky Surface Spectral LW Up Flux	105	246	381
Adjusted All-Sky Surface Spectral LW Down Flux	106	247	382

Table 22(a). Adjusted_Surface_SW_Direct_Diffuse_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
clr_sfc_sw_dir_reg	Clear-Sky Surface SW Direct Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
clr_sfc_sw_diff_reg	Clear-Sky Surface SW Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
all_sfc_sw_dir_reg	All-Sky Surface SW Direct Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_sw_diff_reg	All-Sky Surface SW Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
pristine_sfc_sw_dir_reg	Pristine Surface SW Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
pristine_sfc_sw_diff_reg	Pristine Surface SW Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
allnoaero_sfc_sw_dir_reg	All-Sky-NoAerosol Surface SW Direct Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
allnoaero_sfc_sw_diff_reg	All-Sky-NoAerosol Surface SW Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 22(b).   SDS Index of Adjusted_Surface_SW_Direct_Diffuse_Fluxes_Regional

| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
Clear-Sky Surface SW Direct Flux	107	248	383
Clear-Sky Surface SW Diffuse Flux	108	249	384
All-Sky Surface SW Direct Flux	109	250	385
All-Sky Surface SW Diffuse Flux	110	251	386
Pristine Surface SW Diffuse Flux	111	252	387
Pristine Surface SW Diffuse Flux	112	253	388
All-Sky-NoAerosol Surface SW Direct Flux	113	254	389
All-Sky-NoAerosol Surface SW Diffuse Flux	114	255	390
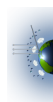
Table 23(a). Adjusted_UVA_UVB_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
toa_uva_dn_reg	TOA UVA Downwelling Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
toa_uvb_dn_reg	TOA UVB Downwelling Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_uva_reg	All-Sky Surface UVA Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_uvb_reg	All-Sky Surface UVB Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_uv_index_reg	All-Sky Surface UV Index - Regional	32-bit real	N/A	0 .. 30	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 23(b).   SDS Index of Adjusted_UVA_UVB_Fluxes_Regional

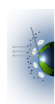| SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
TOA UVA Downwelling Flux	115	256	391
TOA UVB Downwelling Flux	116	257	392
All-Sky Surface UVA Flux	117	258	393
All-Sky Surface UVB Flux	118	259	394
All-Sky Surface UV Index	119	260	395

Table 24(a). Adjusted_PAR_Fluxes_Regional

SDS Name (reg, zon, glo)	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
toa_par_dn_reg	TOA PAR Downwelling Flux – Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
clr_sfc_par_dir_reg	Clear-Sky Surface PAR Direct Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
clr_sfc_par_diff_reg	Clear-Sky Surface PAR Diffuse Flux – Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_par_dir_reg	All-Sky Surface PAR Direct Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
all_sfc_ par_diff_reg	All-Sky Surface PAR Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
pristine_sfc_par_dir_reg	Pristine Surface PAR Direct Flux - Region	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat
pristine_sfc_par_diff_reg	Pristine Surface PAR Diffuse Flux - Regional	32-bit real	W m^{-2}	0 .. 1500	Nlon*Nlat

* No. of Elements for Zonal: Nlat
* No. of Elements for Global: 1

Table 24(b).   SDS Index of Adjusted_PAR_Fluxes_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
TOA PAR Downwelling Flux	120	261	396
Clear-Sky Surface PAR Direct Flux	121	262	397
Clear-Sky Surface PAR Diffuse Flux	122	263	398
All-Sky Surface PAR Direct Flux	123	264	399
All-Sky Surface PAR Diffuse Flux	124	265	400
Pristine Surface PAR Direct Flux	125	266	401
Pristine Surface PAR Diffuse Flux	126	267	402

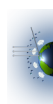## Table 25(a). Adjusted_Entropy_Regional

SDS Name	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
toa_out_entropy_lw_reg	TOA Outgoing Entropy (LW) - Regional	32-bit real	mW m^{-2} K^{-1}	100 .. 3000	Nlon*Nlat
atmos_out_entropy_lw_reg	Atmosphere Outgoing Entropy (LW) - Region	32-bit real	mW m^{-2} K^{-1}	100 .. 3000	Nlon*Nlat
sfc_out_entropy_lw_reg	Surface Outgoing Entropy (LW) - Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 3000	Nlon*Nlat
up_sfc_entropy_lw_reg	Upward Surface Entropy (LW) - Regional	32-bit real	mW m^{-2} K^{-1}	100 .. 3000	Nlon*Nlat
dn_sfc_entropy_lw_reg	Downward Surface Entropy (LW) - Regional	32-bit real	mW m^{-2} K^{-1}	100 .. 3000	Nlon*Nlat*Ns
atmos_entropy_gen_lwnet_reg	Atmosphere Entropy Generation by LW Net -Regional	32-bit real	mW m^{-2} K^{-1}	100 .. 3000	Nlon*Nlat
sfc_entropy_gen_lwnet_reg	Surface Entropy Generation by LW Net - Regional	32-bit real	mW m^{-2} K^{-1}	-500 .. 3000	Nlon*Nlat
toa_in_entropy_sw_reg	TOA Incoming Entropy (SW) - Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 500	Nlon*Nlat
atmos_in_entropy_sw_reg	Atmosphere Incoming Entropy (SW) - Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 300	Nlon*Nlat
sfc_in_entropy_sw_reg	Surface Incoming Entropy (SW) - Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 500	Nlon*Nlat
atmos_entropy_gen_swnet_reg	Atmosphere Entropy Generation by SW Net Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 2500	Nlon*Nlat
sfc_entropy_gen_swnet_reg	Surface Entropy Generation by SW Net - Regional	32-bit real	mW m^{-2} K^{-1}	0 .. 4000	Nlon*Nlat

* No. of Elements for Zonal: Nlat
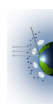* No. of Elements for Global: 1

Table 25(b).   SDS Index of Adjusted_Entropy_Regional

SDS Name	Regional Monthly	Zonal Monthly	Global Monthly
TOA Outgoing Entropy (LW)	127	268	403
Atmosphere Outgoing Entropy (LW)	128	269	404
Surface Outgoing Entropy (LW)	129	270	405
Upward Surface Entropy (LW)	130	271	406
Downward Surface Entropy (LW)	131	272	407
Atmosphere Entropy Generation by LW Net	132	273	408
Surface Entropy Generation by LW Net	133	274	409
TOA Incoming Entropy (SW)	134	275	410
Atmosphere Incoming Entropy (SW)	135	276	411
Surface Incoming Entropy (SW)	136	277	412
Atmosphere Entropy Generation by SW Net	137	278	413
Surface Entropy Generation by SW Net	138	279	414

Table 26(a). Number_of_Observations_and_Flux_Computations_Regional*

| SDS Name	Long Name (Regional, Zonal, Global)	DataType	Units	Range	No. Of Elements Regional
num_sw_obs_reg	Number of CERES SW Flux Observations	32-bit real	N/A	0 .. 744	Nlon*Nlat
num_lw_obs_reg	Number of CERES LW Flux Observations	32-bit real	N/A	0 .. 744	Nlon*Nlat
num_geo_sw_obs_reg	Number of GEO-derived SW Flux Observation	32-bit real	N/A	0 .. 744	Nlon*Nlat
num_geo_lw_obs_reg	Number of GEO-derived LW Flux Observation	32-bit real	N/A	0 .. 744	Nlon*Nlat
num_ini_comp_reg	Number of Valid Initial Hourly Flux Computations	32-bit real	N/A	0 .. 744	Nlon*Nlat
num_adj_comp_reg	Number of Valid Adjusted Hourly Flux Computations	32-bit real	N/A	0 .. 744	Nlon*Nlat
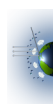
Table 26(b).   SDS Index of Number_of_Observations_and_Flux_Computations_Regional*

SDS Name	Regional Monthly
Number of CERES SW Flux Observations	139
Number of CERES LW Flux Observations	140
Number of GEO-derived SW Flux Observation	141
Number of GEO-derived LW Flux Observation	142
Number of Valid Initial Hourly Flux Computations	143
Number of Valid Adjusted Hourly Flux Computations	144

File Size: SYN1deg-Monthly 148.69 MB
Number of Regional parameters: 222
Number of Zonal and Global parameters: 212
Sets of Regional Records: 64800
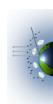Sets of Zonal Records: 180
Set of Global Records: 1
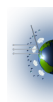
SYN1deg-Month Revision Record

The product Revision Record contains information pertaining to approved section changes. The table lists the date the Software Configuration Change Request (SCCR) was approved, the Release and Version Number, the SCCR number, a short description of the revision, and the revised sections. The authors are listed on the document cover.

SYN1deg-Month Revision Record

SCCR Approval Date	Release/ Version Number	SCCR Number	Description of Revision	Section(s) Affected
07/19/2010	R5V1	795	• Initial version of this document. This data product was previously named AVG/ZAVG.	All
			• The ASDC footer was added to the bottom of the document. (12/04/2013)	All
			• Eliminated section numbers from the Data Products Catalog. Specifically, in this document, section number 2.11 was removed. (12/17/2013)	All
			• Updated some links to refer to the .pdf file instead of the .doc file. (06/20/2014)	All
08/24/2021	R6V1	1410	• Initial version of SSYN!deg-Month Edition4 DPC.	All
			• Updated Vgroup Names.	Tables 1, 2, and 3
			• Updated dimensions description.	Table 4a-
			• Replaced Time and Position with Regional Information.	Tables 5 a and b
			• Cloud properties are in one SDS with additional dimension for total instead of the previous 4.	Table 7
			• Stowe-Ignatov and MODIS Aerosol Optical Depth Tables Removed.	Tables 8 and 9
			• Untuned and tuned fluxes renamed Initial and adjusted fluxes, respectively. Order of tables changed.	Tables 8 through 11 and 14 through17
			• Changed Total to All-Sky Flux.	All
			• Untuned and tuned emulated window TOA fluxes renamed Initial and adjusted fluxes, respectively. Order of table changed.	Tables 12 and 18
			• Added Initial and Adjusted Meteorological Variables.	Tables 13 and 19

SYN1deg-Month Revision Record

SCCR Approval Date	Release/ Version Number	SCCR Number	Description of Revision	Section(s) Affected
08/24/2021 (Continued	R6V1	1410	• Added spectral TOA and Sfc SW and LW fluxes.	Tables 20 and 21
			• Moved location of SW Direct/Diffuse, UVA/UVB, and PAR Tables.	Tables 22, 23, and 24
			• Added entropy values.	Table 25
			• Added number of observations.	Table 26