

## *const\_2d\_asm\_Mx: Constant Model Parameters*

**Frequency:** constant from 00:00 UTC (time-invariant)

**Spatial Grid:** 2D, cubed-sphere on single-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, time=1

**Granule Size:** ~3.6 GB

Name	Dim	Description	Units
AREA	tyx	agrid cell area	m+2
FRLAKE	tyx	fraction of lake	1
FRLAND	tyx	fraction of land	1
FRLANDICE	tyx	fraction of land ice	1
FROCEAN	tyx	fraction of ocean	1
PHIS	tyx	surface geopotential height	m+2 s-2
SGH	tyx	isotropic stdv of GWD topography	m

## *inst\_01hr\_3d\_DTHDTCN\_Mv: Model,DTHDTCN Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~5.0 GB

Name	Dim	Description	Units
DTHDTCN	tzyx	potential temperature tendency due to convection	K s-1

## *inst\_01hr\_3d\_DTHDT\_Mv: Model,DTHDT Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~17.0 GB

Name	Dim	Description	Units
DTHDT	tzyx	pressure weighted potential temperature tendency due to moist	Pa K s-1

### *inst\_01hr\_3d\_DELP\_Mv: Model,DELP Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~24.0 GB

Name	Dim	Description	Units
DELP	tzyx	pressure thickness	Pa

### *inst\_01hr\_3d\_FCLD\_Mv: Model,FCLD Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~7.7 GB

Name	Dim	Description	Units
FCLD	tzyx	cloud fraction for radiation	1

### *inst\_01hr\_3d\_H\_Mv: Model,Mid-Layer Height Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~55.0 GB

Name	Dim	Description	Units
H	tzyx	mid layer heights	m

### *inst\_01hr\_3d\_OMEGA\_Mv: Model,Omega Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~95.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
OMEGA	tzyx	vertical pressure velocity	Pa s-1

### *inst\_01hr\_3d\_QG\_Mv: Model,QG Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~1.7 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
QGRAPEL	tzyx	mass fraction of graupel	kg kg-1

### *inst\_01hr\_3d\_QI\_Mv: Model,QI Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~12.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
QI	tzyx	mass fraction of cloud ice water	kg kg-1

### *inst\_01hr\_3d\_QL\_Mv: Model,QL Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~14.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
QL	tzyx	mass fraction of cloud liquid water	kg kg-1

### *inst\_01hr\_3d\_QR\_Mv: Model,QR Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~3.0 GB

Name	Dim	Description	Units
QRAIN	tzyx	mass fraction of rain	kg kg <sup>-1</sup>

#### *inst\_03hr\_3d\_QS\_Mv: Model, QS Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~3.0 GB

Name	Dim	Description	Units
QSNOW	tzyx	mass fraction of snow	kg kg <sup>-1</sup>

#### *inst\_03hr\_3d\_QV\_Mv: Model, QV Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~63.0 GB

Name	Dim	Description	Units
QV	tzyx	specific humidity	kg kg <sup>-1</sup>

#### *inst\_03hr\_3d\_RI\_Mv: Model, RI Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~6.5 GB

Name	Dim	Description	Units
RI	tzyx	ice phase cloud particle effective radius	m

### *inst\_03hr\_3d\_RL\_Mv: Model,RL Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~6.8 GB

Name	Dim	Description	Units
RL	tzyx	liquid cloud particle effective radius	m

### *inst\_03hr\_3d\_T\_Mv: Model,T Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~67.0 GB

Name	Dim	Description	Units
T	tzyx	air temperature	K

### *inst\_03hr\_3d\_U\_Mv: Model,U-Wind Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~66.0 GB

Name	Dim	Description	Units
U	tzyx	eastward wind	m s <sup>-1</sup>

### *inst\_03hr\_3d\_V\_Mv: Model,V-Wind Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~69.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
V	tzyx	northward wind	m s-1

### *inst\_03hr\_3d\_W\_Mv: Model,W-Wind Meteorological Field*

**Frequency:** 1-hourly from 00:00 UTC (instantaneous)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=181, time=1

**Granule Size:** ~96.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
W	tzyx	vertical velocity	m s-1

### *inst\_15mn\_2d\_asm\_Mx: Single-Level Diagnostics*

**Frequency:** 15-minutes from 00:00 UTC (instantaneous)

**Spatial Grid:** 15MN, native cubed-sphere on single-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, time=1

**Granule Size:** ~23.0 GB

<b>Name</b>	<b>Dim</b>	<b>Description</b>	<b>Units</b>
BSTAR	tyx	surface buoyancy scale	m s-2
CAPE	tyx	cape for surface parcel	J kg-1
CIN	tyx	inhibition for surface parcel	J kg-1
CNV_FRC	tyx	convective fraction	
CWP	tyx	condensed water path	kg m-2
DBZ_MAX	tyx	Maximum simulated radar reflectivity	dBZ
DIVG200	tyx	divergence at 200 hPa	s-1
DIVG500	tyx	divergence at 500 hPa	s-1
DIVG700	tyx	divergence at 700 hPa	s-1
DIVG850	tyx	divergence at 850 hPa	s-1
EFLUX	tyx	total latent energy flux	W m-2
EVAP	tyx	evaporation from turbulence	kg m-2 s-1
H1000	tyx	height at 1000 mb	m
H500	tyx	height at 500 hPa	m

HFLUX	tyx	sensible heat flux from turbulence	W m-2
IWP	tyx	ice water path	kg m-2
LWP	tyx	liquid water path	kg m-2
PBLH	tyx	planetary boundary layer height	m
PRECANV	tyx	anvil precipitation	kg m-2 s-1
PRECCON	tyx	convective precipitation	kg m-2 s-1
PRECLSC	tyx	nonanvil large scale precipitation	kg m-2 s-1
PRECSNO	tyx	snowfall	kg m-2 s-1
PRECTOT	tyx	total precipitation	kg m-2 s-1
PS	tyx	surface pressure	Pa
PTYPE	tyx	surface precipitation type	1
QV2M	tyx	2-meter specific humidity	kg kg-1
SLP	tyx	sea level pressure	Pa
SNOMAS	tyx	Total snow storage land	kg m-2
SPEED	tyx	surface wind speed	m s-1
T2M	tyx	2-meter air temperature	K
T2MDEW	tyx	dew point temperature at 2 m	K
TAUX	tyx	eastward surface stress	N m-2
TAUY	tyx	northward surface stress	N m-2
TBISCCP	tyx	isccp mean all sky 10.5 micron brightness temp	K
TBRB09RG	tyx	brightness temperature in RRTMG band09 (1180-1390 cm-1)	K
TBRB10RG	tyx	brightness temperature in RRTMG band10 (1390-1480 cm-1)	K
TBRB11RG	tyx	brightness temperature in RRTMG band11 (1480-1800 cm-1)	K
TQC	tyx	vertically integrated cloud cover	1
TQG	tyx	vertically integrated graupel	kg m-2
TQI	tyx	total precipitable ice water	kg m-2
TQL	tyx	total precipitable liquid water	kg m-2
TQR	tyx	vertically integrated rain water	kg m-2
TQS	tyx	vertically integrated snow	kg m-2
TQV	tyx	total precipitable water vapor	kg m-2
TSKIN	tyx	surface skin temperature	K
U10M	tyx	10-meter eastward wind	m s-1

U200	tyx	eastward wind at 200 hPa	m s-1
U500	tyx	eastward wind at 500 hPa	m s-1
U700	tyx	eastward wind at 700 hPa	m s-1
U850	tyx	eastward wind at 850 hPa	m s-1
USTAR	tyx	surface velocity scale	m s-1
V10M	tyx	10-meter northward wind	m s-1
V200	tyx	northward wind at 200 hPa	m s-1
V500	tyx	northward wind at 500 hPa	m s-1
V700	tyx	northward wind at 700 hPa	m s-1
V850	tyx	northward wind at 850 hPa	m s-1
VORT200	tyx	vorticity at 200 hPa	s-1
VORT500	tyx	vorticity at 500 hPa	s-1
VORT700	tyx	vorticity at 700 hPa	s-1
VORT850	tyx	vorticity at 850 hPa	s-1

### ***inst\_15mn\_2d\_prs\_Mx: Select-Pressure-Level***

**Frequency:** 15-minutes from 00:00 UTC (instantaneous)

**Spatial Grid:** 15MN, native cubed-sphere on select-pressure-levels, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=4, time=1

**Granule Size:** ~7.5 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
OMEGA	tzyx	vertical pressure velocity	Pa s-1
RH	tzyx	relative humidity after moist	1
Z	tzyx	edge heights	m

### ***tavg\_01hr\_3d\_H\_Mv: Model, H Meteorological Field***

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=132, time=1

**Granule Size:** ~50.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
H	tzyx	mid layer heights	m

### *tavg\_01hr\_3d\_U\_Mv: Model, U Meteorological Field*

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=132, time=1

**Granule Size:** ~62.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
U	tzyx	eastward wind	m s-1

### *tavg\_01hr\_3d\_V\_Mv: Model,V Meteorological Field*

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=132, time=1

**Granule Size:** ~64.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
V	tzyx	northward wind	m s-1

### *tavg\_01hr\_3d\_W\_Mv: Model,W Meteorological Field*

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:** grid resolution=5760, level=132, time=1

**Granule Size:** ~91.0 GB

<i>Name</i>	<i>Dim</i>	<i>Description</i>	<i>Units</i>
W	tzyx	vertical velocity	m s-1

### *tavg\_01hr\_3d\_WU\_Mv: Model,WU Meteorological Field*

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:**  $grid\ resolution=5760$ ,  $level=132$ ,  $time=1$

**Granule Size:** ~91.0 GB

Name	Dim	Description	Units
WU	tzyx	vertical velocity	m s-1

### *tavg\_01hr\_3d\_WV\_Mv: Model WV Meteorological Field*

**Frequency:** 1-hourly from 00:30 UTC (time-averaged)

**Spatial Grid:** 01HR, cubed-sphere on model-level, full horizontal resolution on cube

**Dimensions:**  $grid\ resolution=5760$ ,  $level=132$ ,  $time=1$

**Granule Size:** ~92.0 GB

Name	Dim	Description	Units
WV	tzyx	vertical velocity	m s-1

### *tavg\_15mn\_2d\_flx\_Mx: Surface Flux Diagnostics*

**Frequency:** 15-minutes from 00:00 UTC (time-averaged)

**Spatial Grid:** 15MN, native cubed-sphere on single-level, full horizontal resolution on cube

**Dimensions:**  $grid\ resolution=5760$ ,  $time=1$

**Granule Size:** ~12.0 GB

Name	Dim	Description	Units
ALBEDO	tyx	surface albedo	1
FLNS	tyx	surface net downward longwave flux	W m-2
FLNSC	tyx	surface net downward longwave flux assuming clear sky	W m-2
FLNSCNA	tyx	surface net downward longwave flux assuming clear sky and no aerosol	W m-2
LWS	tyx	surface absorbed longwave radiation	W m-2
LWSC	tyx	surface absorbed longwave radiation assuming clear sky	W m-2
LWSCNA	tyx	surface absorbed longwave radiation assuming clear sky and no aerosol	W m-2
OLR	tyx	upwelling longwave flux at toa	W m-2
OLRC	tyx	upwelling longwave flux at toa assuming clear sky	W m-2

OLRCNA	txy	upwelling longwave flux at toa assuming clear sky and no aerosol	W m-2
OSR	txy	toa outgoing shortwave flux	W m-2
OSRCLR	txy	toa outgoing shortwave flux assuming clear sky	W m-2
PBLH	txy	planetary boundary layer height	m
PRCP_GRAUPEL	txy	falling graupel precipitation at surface	kg m-2 s-1
PRCP_ICE	txy	falling ice precipitation at surface	kg m-2 s-1
PRCP_RAIN	txy	falling rain precipitation at surface	kg m-2 s-1
PRCP_SNOW	txy	falling snow precipitation at surface	kg m-2 s-1
PRECANV	txy	anvil precipitation	kg m-2 s-1
PRECCON	txy	convective precipitation	kg m-2 s-1
PRECLSC	txy	nonanvil large scale precipitation	kg m-2 s-1
PRECSNO	txy	snowfall	kg m-2 s-1
PRECTOT	txy	total precipitation	kg m-2 s-1
RADSRF	txy	net downwelling radiation at surface	W m-2
RADSWT	txy	toa incoming shortwave flux	W m-2
SFCEM	txy	longwave flux emitted from surface	W m-2
SWCLDPRS	txy	cloud top pressure	Pa
SWCLDTMP	txy	cloud top temperature	K
SWGDN	txy	surface incoming shortwave flux	W m-2
SWGDNNC	txy	surface incoming shortwave flux assuming clear sky	W m-2
SWGNET	txy	surface net downward shortwave flux	W m-2
SWGNETC	txy	surface net downward shortwave flux assuming clear sky	W m-2
SWGNETCNA	txy	surface net downward shortwave flux assuming clear sky and no aerosol	W m-2
SWGNETNA	txy	surface net downward shortwave flux assuming no aerosol	W m-2
SWTNET	txy	toa net downward shortwave flux	W m-2
SWTNETC	txy	toa net downward shortwave flux assuming clear sky	W m-2
SWTNETCNA	txy	toa net downward shortwave flux assuming clear sky and no aerosol	W m-2
SWTNETNA	txy	toa net downward shortwave flux assuming no aerosol	W m-2
UH25MX	txy	updraft helicity 2 to 5 km mean	m+2 s-2