CORDEX-CMIP6 Data Request: "Atmospheric" variables (v1)

ag agregation: **i:** instantaneous; **a:** averaged over output interval (in model); **c:** cumulative over sampling period

output variable	units	ag	long_name	standard_name	CORDEX-CMIP5 mon	day	6hr	3hr	CORDEX-CMIP6 mon	day	6hr	3hr	1hr	Priority	Comments
tas	K	i	Near-Surface Air Temperature	air_temperature	x	x		x	x	x			x	CORE	3hr -> 1hr
tasmax	K		Daily Maximum Near-Surface Air Temperature	air_temperature	x	x			x	x				CORE	
tasmin	K		Daily Minimum Near-Surface Air Temperature	air_temperature	x	x			x	x				CORE	
ts	K	i	Surface Temperature	surface_temperature	x	x	x		x	x			x		6hr -> 1hr
pr	kg m-2 s-1	a	Precipitation	precipitation_flux	x	x		x	x	x			x	CORE	3hr -> 1hr
prc	kg m-2 s-1	a	Convective Precipitation	convective_precipitation_flux		x		x	x	x			x		3hr -> 1hr; + mon
prhmax	kg m-2 s-1		Daily Maximum Hourly Precipitation Rate	precipitation_flux		x				x					
prsn	kg m-2 s-1	a	Snowfall Flux	snowfall_flux	x	x		x	x	x			x		3hr -> 1hr
evspsbl	kg m-2 s-1	a	Evaporation	water_evaporation_flux	x	x	x		x	x			x	CORE	3hr -> 1hr
evspsblpot	kg m-2 s-1	a	Potential Evapotranspiration	water_potential_evaporation_flux	x	x	x								too many ways to calculate, a few RCMs provide it, delete ?
mrros	kg m-2 s-1	a	Surface Runoff	surface_runoff_flux	x	x	x		x	x	x				
mrro	kg m-2 s-1	a	Total Runoff	runoff_flux	x	x	x		x	x	x				
snm	kg m-2 s-1	a	Surface Snow Melt	surface_snow_melt_flux	x	x	x		x	x	x				
huss	1	i	Near-Surface Specific Humidity	specific_humidity	x	x		x	x	x			x	CORE	3hr -> 1hr
hurs	%	i	Near-Surface Relative Humidity	relative_humidity	x	x		x	x	x			x	CORE	3hr -> 1hr
ps	Pa	i	Surface Air Pressure	surface_air_pressure		x		x	x	x			x	CORE	3hr -> 1hr; + mon
psl	Pa	i	Sea Level Pressure	air_pressure_at_sea_level	x	x		x	x	x			x	CORE	3hr -> 1hr
tauu	Pa	a	Surface Downward Eastward Wind Stress	surface_downward_eastward_stress		x	x		x	x	x				+ mon
tauv	Pa	a	Surface Downward Northward Wind Stress	surface_downward_northward_stress		x	x		x	x	x				+ mon
sfcWind	m s-1	i	Near-Surface Wind Speed	wind_speed	x	x		x	x	x			x	CORE	3hr -> 1hr
sfcWindmax	m s-1		Daily Maximum Near-Surface Wind Speed	wind_speed	x	x			x	x					
uas	m s-1	i	Eastward Near-Surface Wind	eastward_wind	x	x	x		x	x			x	CORE	6hr -> 1hr
vas	m s-1	i	Northward Near-Surface Wind	northward_wind	x	x	x		x	x			x	CORE	6hr -> 1hr
wsgsmax	m s-1		Daily Maximum Near-Surface Wind Speed of Gust	wind_speed_of_gust		x				x					
clt	%	a	Total Cloud Fraction	cloud_area_fraction	x	x		x	x	x			x	CORE	3hr > 1hr
clh	%	a	High Level Cloud Fraction	cloud_area_fraction_in_atmosphere_layer		x	x		x	x			x		3hr > 1hr; + mon
clm	%	a	Mid Level Cloud Fraction	cloud_area_fraction_in_atmosphere_layer		x	x		x	x			x		3hr > 1hr; + mon
cll	%	a	Low Level Cloud Fraction	cloud_area_fraction_in_atmosphere_layer		x	x		x	x			x		3hr > 1hr; +mon
sund	s	c	duration of sunshine	duration_of_sunshine	x	x		x	x	x			x		3hr > 1hr; The WMO definition of sunshine is that the surface incident
rsds	W m-2	a	Surface Downwelling Shortwave Radiation	surface_downwelling_shortwave_flux_in_air	x	x		x	x	x			x	CORE	3hr > 1hr
rlds	W m-2	a	Surface Downwelling Longwave Radiation	surface_downwelling_longwave_flux_in_air	x	x		x	x	x			x	CORE	3hr > 1hr
rsus	W m-2	a	Surface Upwelling Shortwave Radiation	surface_upwelling_shortwave_flux_in_air	x	x		x	x	x			x		3hr > 1hr
rlus	W m-2	a	Surface Upwelling Longwave Radiation	surface_upwelling_longwave_flux_in_air	x	x		x	x	x			x		3hr > 1hr
rlut	W m-2	a	TOA Outgoing Longwave Radiation	toa_outgoing_longwave_flux	x	x		x	x	x			x		3hr > 1hr
rsdt	W m-2	a	TOA Incident Shortwave Radiation	toa_incoming_shortwave_flux	x	x		x	x	x			x		3hr > 1hr
rsut	W m-2	a	TOA Outgoing Shortwave Radiation	toa_outgoing_shortwave_flux	x	x		x	x	x			x		3hr > 1hr
hfls	W m-2	a	Surface Upward Latent Heat Flux	surface_upward_latent_heat_flux	x	x		x	x	x			x		3hr > 1hr
hfss	W m-2	a	Surface Upward Sensible Heat Flux	surface_upward_sensible_heat_flux	x	x		x	x	x			x		3hr > 1hr
mrfso	kg m-2	i	Soil Frozen Water Content	soil_frozen_water_content	x	x	x		x	x	x				
mrso	kg m-2	i	Total Soil Moisture Content	soil_moisture_content	x	x	x		x	x	x				
snw	kg m-2	i	Surface Snow Amount	surface_snow_amount	x	x	x		x	x	x				
snc	%	i	Snow Area Fraction	surface_snow_area_fraction	x	x	x		x	x	x				
snd	m	i	Snow Depth	surface_snow_thickness	x	x	x		x	x	x				
sic	%	i	Sea Ice Area Fraction	sea_ice_area_fraction	x	x	x		x	x	x				
zmla	m	i	Height of Boundary Layer	atmosphere_boundary_layer_thickness		x	x		x	x			x		3hr -> 1hr; + mon
prw	kg m-2	i	Water Vapor Path	atmosphere_water_vapor_content		x	x		x	x	x				+ mon
clwvi	kg m-2	i	Condensed Water Path	atmosphere_cloud_condensed_water_content		x	x		x	x	x				+ mon
clivi	kg m-2	i	Ice Water Path	atmosphere_cloud_ice_content		x	x		x	x	x				+ mon
ua850	m s-1	i	Eastward Wind	eastward_wind	x	x	x		x	x	x				
va850	m s-1	i	Northward Wind	northward_wind	x	x	x		x	x	x				
ta850	K	i	Air Temperature	air_temperature	x	x	x		x	x	x				
hus850	1	i	Specific Humidity	specific_humidity	x	x	x		x	x	x				
ua500	m s-1	i	Eastward Wind	eastward_wind	x	x	x		x	x	x				
va500	m s-1	i	Northward Wind	northward_wind	x	x	x		x	x	x				
zg500	m	i	Geopotential Height	geopotential_height	x	x	x		x	x	x				
ta500	K	i	Air Temperature	air_temperature	x	x	x		x	x	x				
ua200	m s-1	i	Eastward Wind	eastward_wind	x	x	x		x	x	x				
va200	m s-1	i	Northward Wind	northward_wind	x	x	x		x	x	x				
ta200	K	i	Air Temperature	air_temperature	x	x	x		x	x	x				
zg200	m	i	Geopotential Height	geopotential_height	x	x	x		x	x	x				

New Atmospheric variables

output variable	units	ag	long_name	standard_name	mon	day	6hr	3hr	mon	day	6hr	3hr	1hr	Priority	Comments
uaPlev	m s-1	i	Eastward Wind	eastward_wind					x	x	x				Additional pressure levels, should be synchronised with the CMIP6
vaPlev	m s-1	i	Northward Wind	northward_wind					x	x	x				pressure levels (Amon, plev17), Plev: 1000, 925, 850, 700, 600, 500,
taPlev	K	i	Air Temperature	air_temperature					x	x	x				400, 300, 250, 200, 150, 100, 70, 50, 30,20 ,10. It's up to the
zgPlev	m	i	Geopotential Height	geopotential_height					x	x	x				CORDEX communities to decide on additional pressure levels.
husPlev	1	i	Specific Humidity	specific_humidity					x	x	x				
waPlev	m s-1	i	Upward Air Velocity	upward_air_velocity					x	x	x				
ua100m	m s-1	i	Eastward Wind at 100m	eastward_wind					x	x			x		Additional heights (50, 150, 200m etc.) can be added by the regional C
va100m	m s-1	i	Northward Wind at 100m	northward_wind					x	x			x		
z0	m	i	Surface Roughness Length	surface_roughness_length					x						output frequency ???
CAPE	J kg-1	i	Convective Available Potential Energy	atmosphere_convective_available_potential_energy_wrt_surfac											output frequency ???
LI	K	i	Lifted Index	temperature_difference_between_ambient_air_and_air_lifted_a											include ???
CIN	J kg-1	i	Convective Inhibition	atmosphere_convective_inhibition_wrt_surface											include ???

Static variables (fx)

output variable	units	ag	long_name	standard_name										Priority	Comments
areacella	m2		Atmosphere Grid-Cell Area	cell_area										CORE	
orog	m		Surface Altitude	surface_altitude										CORE	
sftlf	%		Land Area Fraction	land_area_fraction										CORE	
sftlaf ??	%		Lake Area Fraction	lake_area_fraction											not in CMIP6 or in CF
sfturf ??	%		Urban Area Fraction	urban_area_fraction											not in CMIP6 or in CF
sftgif	%		Fraction of Grid Cell Covered with Glacier	land_ice_area_fraction											
mrsofc	kg m-2		Capacity of Soil to Store Water	soil_moisture_content_at_field_capacity											
rootd	m		Maximum Root Depth	root_depth											
			Land Cover Class												include ??
			Soil class												include ??