List of COSMO Grib keys

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This file lists all simplified GRIB keys that can be used in Pycosmo to read variables from COSMO outputs using the *get_variable* function.

Pycosmo key	Units	Description
ADEDO2	K	adedokun 2 index
AEVAP_S	unknown	unknown
ALB_RAD	1	surface albedo
ALHFL_S	unknown	unknown
ALWD_S	unknown	unknown
ALWU_S	unknown	unknown
APAB_S	unknown	unknown
ASHFL_S	unknown	unknown
ASOB_S	unknown	unknown
ASOB_T	unknown	unknown
ASWDIFD_S	unknown	unknown
ASWDIFU_S	unknown	unknown
ASWDIR_S	unknown	unknown
ATHB_S	unknown	unknown
ATHB_T	unknown	unknown
AUMFL_S	unknown	unknown
AUSTRSSO	Nm-2	average of u-stress due to SSO
AVDISSSO	Wm-2	average of vertical integrated dissipation of kinetic energy due to SSO
AVMFL_S	unknown	unknown
AVSTRSSO	Nm-2	average of v-stress due to SSO
BAS_CON	1	index of convective cloud base
BOAGAE_WE	m	Gauss-Boaga coordinates
BOAGAE_SN	m	Gauss-Boaga coordinates
BOAGAW_WE	m	Gauss-Boaga coordinates
BOAGAW_SN	m	Gauss-Boaga coordinates
BRN	1	bulk richardson number
Ba-140	unknown	unknown
Ba-140_BL	unknown	unknown
Ba-140_DD	unknown	unknown
Ba-140_WD	unknown	unknown
CAPE_3KM	Jkg-1	cape of mean surface layer parcel
CAPE_CON	Jkg-1	&
CAPE_ML	Jkg-1	cape of mean surface layer parcel
CAPE_MU	Jkg-1	cape of most unstable parcel
CFLDT	1/s	CFL number divided by timestep
CEILING	m	Cloud ceiling height (above MSL)
CIN_ML	Jkg-1	convective inhibition of mean surface layer parcel
CIN_MU	Jkg-1	convective inhibition of most unstable parcel
CLC	1	cloud area fraction
CLCH	1	high cloud cover
CLCL	1	low cloud cover
CLCM	1	medium cloud cover
CLCT	1	total cloud cover
CLCT_MOD	1	modified_total_cloud_cover
CLC_CON	1	convective cloud area fraction
CLC_SGS	1	grid scale cloud area fraction
CLDEPTH	1	normalized cloud depth
CLI_RATIO	%	cloud ice ratio (Qi/Qc+Qi)
CLW_CON	1	convective cloud liquid water
CN_TSTORM	%	thunderstorm probabilty using AdaBoost classifier
CONV_%	%	percentage of convective precipitation
C_TSTORM	undefined	thunderstorm index using AdaBoost classifier
C_T_LK	1	&
Cs-137	unknown	unknown
Cs-137_BL	unknown	unknown
Cs-137_DD	unknown	unknown
Cs-137_WD	unknown	unknown
DBZ	1	unattenuated radar reflectivity in Rayleigh approximation
DBZ_850	unknown	unknown
DBZ_CMAX	unknown	unknown
DCI	K	deep convection index
DD	undefined	undefined

DD_10M	unknown	unknown
DD_ANAI	degree	wind direction analysis increment
DEPTH_LK	m	lake depth
DPSDT	Pas-1	surface pressure change
DP_BS_LK	m	&
DQVDT	s-1	tendency of water vapor
DQV_CON	s-1	convective tendency of specific humidity
DT_CON	Ks-1	convective tendency of temperature
DURSUN	s	duration of sunshine
DURSUN_M	s	maximum duration of sunshine
DURSUN_R	s	relative duration of sunshine
DU_CON	ms-2	convective tendency of u-wind component
DV_CON	ms-2	convective tendency of v-wind component
D_RH_2M_K	%	kalman correction to 2m relative humidity
D_TD	K	dew point depression
D_TD_2M	unknown	unknown
D_TD_2M_K	K	kalman correction to 2m dew point temperature
D_T_2M_K	K	kalman correction to 2m temperature
EDR	m2s-3	dissipation rate of turbulent kinetic energy
ENTH	kJ/kg	enthalpy
ENTH_2M	unknown	unknown
EVATRA_SUM	kgm-2	sum of contributions to evapotranspiration
FC	s-1	coriolis parameter
FCOR	undefined	undefined
FETCH_LK	m	wind fetch over lake
FF	undefined	undefined
FF_10M	unknown	unknown
FF_ANAI	ms-1	wind speed analysis increment
FI	m2s-2	geopotential
FIS	unknown	unknown
FI_ANAI	m2s-2	geopotential analysis increment
FMAX_10M	unknown	unknown
FOR_D	-	ground fraction covered by deciduous forest
FOR_E	-	ground fraction covered by evergreen forest
FRESHSNW	undefined	freshness of snow
FR_ICE	1	sea ice area fraction
FR_LAKE	1	fraction of inland lake water
FR_LAND	1	land-sea fraction
FR_PLANT_B	undefined	undefined
GAMSO_LK	m-1	&
GEM	%	emissivity of the ground
GLOB	W/m**2	global shortwave radiation at surface
GLOB_DIF	W/m**2	global diffuse shortwave radiation at the surface
GLOB_DIR	W/m**2	global direct (beam) shortwave radiation at the surface
GLOB_vE	W/m**2	global shortwave radiation on a vertical surface facing east
GLOB_vN	W/m**2	global shortwave radiation on a vertical surface facing north
GLOB_vS	W/m**2	global shortwave radiation on a vertical surface facing south
GLOB_vW	W/m**2	global shortwave radiation on a vertical surface facing west
GRAU_GSP	kgm-2	large scale graupel
HAIL_GSP	kgm-2	large scale hail
HBAS_CON	m	height of convective cloud base
HBAS_CONI	m	height of convective cloud base
HBAS_SC	m	height of shallow convective cloud base
HCBAS	m	height of cloud base
HCTOP	m	height of cloud top
HFL	unknown	unknown
HHL	unknown	unknown
HI	degF	heat index
HMO3	Pa	air pressure at ozone maximum
HORIZON	undefined	horizon angle - topography
HPBL	m	PBL height above ground computed with BRN
HSURF	unknown	unknown
HTOP_CON	m	height of convective cloud top
HTOP_CONI	m	height of convective cloud top
HTOP_DC	m	height of dry convection top
HTOP_SC	m	height of shallow convective cloud top
HZEROCL	m	height of freezing level
H_B1_LK	m	&
H_ICE	m	sea ice thickness
H_ML_LK	m	&
H_SNOW	m	thickness of snow
I-131a	unknown	unknown
I-131a_BL	unknown	unknown
I-131a_DD	unknown	unknown
I-131a_WD	unknown	unknown
I-131g	unknown	unknown
I-131g_BL	unknown	unknown
I-131g_DD	unknown	unknown
I-131g_WD	unknown	unknown
I-131o	unknown	unknown
I-131o_BL	unknown	unknown
I-131o_DD	unknown	unknown
I-131o_WD	unknown	unknown
KOINDEX	K	KO index
Kr-85	unknown	unknown
Kr-85_BL	unknown	unknown
Kr-85_DD	unknown	unknown

Kr-85_WD	unknown	unknown
LAI	1	leaf area index
LAI_MN	1	leaf area index minimum
LAI_MX	1	leaf area index maximum
LCL_ML	m	height above ground of lifting condesation level
LFC_ML	m	height above ground of level of free convection
LUM	klux	luminosity
LW_IN_T2M	W/m**2	incoming longwave radiation at surface
LW_IN_TG	W/m**2	incoming longwave radiation at surface
LW_IN_TS	W/m**2	incoming longwave radiation at surface
LW_TG_vS	W/m**2	incoming longwave radiation on a vertical surface facing south
MFLX_CON	kgm-2s-1	convective mass flux density
MIXRAT	g/kg	mixing ratio
MIXRAT_2M	unknown	unknown
O3	kgkg-1	ozone mass mixing ratio
OMEGA	Pas-1	omega
P	Pa	pressure
PABS_RAD	unknown	unknown
PDIFF_CON	Pa	pressure difference between cloud base and cloud top
PLCOV	1	vegetation area fraction
PLCOV_MN	1	vegetation area fraction minimum
PLCOV_MX	1	vegetation area fraction maximum
PMSL	Pa	mean sea level pressure
PMSL_ANAI	Pa	msl pressure analysis increment
PP	Pa	deviation from reference pressure
PRG_GSP	kgm-2s-1	mass flux density of large scale graupel
PRH_GSP	kgm-2s-1	mass flux density of large scale hail
PRR_CON	kgm-2s-1	mass flux density of convective rainfall
PRR_GSP	kgm-2s-1	mass flux density of large scale rainfall
PRS_CON	kgm-2s-1	mass flux density of convective snowfall
PRS_GSP	kgm-2s-1	mass flux density of large scale snowfall
PS	unknown	unknown
P_ANAI	Pa	pressure analysis increment
P_BIRCH	undefined	undefined
QC	kgkg-1	specific cloud liquid water content
QCVG_CON	s-1	&
QC_ANAI	kgkg-1	specific cloud water content analysis increment
QC_RAD	kgkg-1	sub scale specific cloud liquid water content
QG	kgkg-1	specific graupel content
QH	kgkg-1	specific hail content
QI	kgkg-1	specific cloud ice content
QI_RAD	kgkg-1	sub scale specific cloud ice content
QNC	kg-1	cloud number density
QNG	kg-1	graupel number density
QNH	Pa	pressure reduced at sea level
QNI	kg-1	cloud ice number density
QNR	kg-1	rain number density
QNS	kg-1	snow number density
QP0_B	undefined	undefined
QR	kgkg-1	specific rain content
QS	kgkg-1	specific snow content
QV	kgkg-1	specific humidity
QVSFLX	s-1m-2	surface flux of water vapour
QV_2M	unknown	unknown
QV_ANAI	kgkg-1	specific humidity analysis increment
QV_S	unknown	unknown
Q_SEDIM	1	precipitation water (water loading)
RADSPQUAL	undefined	Radar spatial quality function
RAIN_CON	kgm-2	convective rainfall
RAIN_GSP	kgm-2	large scale rainfall
RCLD	undefined	standard deviation of saturation deficit
RELHUM	%	relative humidity
RELHUM_2M	unknown	unknown
RESID_WSO	kgm-2	residuum of soil moisture
RHO_SNOW	kgm-3	density of snow
RH_2M_K	%	2m relative humidity
RH_ICE	%	relative humidity over ice
RLAT	radian	latitude
RLON	radian	longitude
ROOTDP	m	root depth
RUNOFF	kgm-2	subsurface runoff
Ru-103	unknown	unknown
Ru-103_BL	unknown	unknown
Ru-103_DD	unknown	unknown
Ru-103_WD	unknown	unknown
SDI_1	1/s	Supercell detection index 1 (rotating up-/downdrafts
SDI_2	1/s	Supercell detection index 2 (rotating updrafts
SI	K	showalter index
SKYVIEW	1	sky-view factor
SLI	K	surface lifted index
SLO_ANG	undefined	slope angle - topography
SLO_ASP	undefined	slope aspect - topography
SNOWLMT	m	height of the snow fall limit in m above sea level
SNOWLMTCH	m	altitude of snow limit
SNOW_%	%	percentage of precipitation in snow
SNOW_CON	kgm-2	convective snowfall
SNOW_GSP	kgm-2	large scale snowfall

SOBS_RAD	unknown	unknown
SOBT_RAD	unknown	unknown
SOHR_RAD	Ks-1	&
SOILTYP	1	soil type
SSO_GAMMA	-	anisotropy of sub-grid scale orography
SSO_SIGMA	-	mean slope of sub-grid scale orography
SSO_STDH	m	standard deviation of sub-grid scale orography
SSO_THETA	rad	angle between principal axis of orography and east
SUNSH	undefined	undefined
SUNSH2	undefined	undefined
SUN_SUM	undefined	undefined
SUN_SUM2	undefined	undefined
SWDIR_COR	1	topo correction of direct solar radiation
SWEAT	undefined	severe weather thread index
SWISS00	K	showalter index with windshear
SWISS12	K	surface lifted index with windshear
SWISS_SN	m	Swiss coordinates
SWISS_WE	m	Swiss coordinates
SYNME5	-	synthetic satellite images Meteosat5
SYNME6	-	synthetic satellite images Meteosat6
SYNME7	-	synthetic satellite images Meteosat7
SYNMSG	-	synthetic satellite images MSG
Sr-90	unknown	unknown
Sr-90_BL	unknown	unknown
Sr-90_DD	unknown	unknown
Sr-90_WD	unknown	unknown
T	K	soil surface temperature
TCH	1	drag coefficient of heat
TCM	1	drag coefficient of momentum
TD	K	dew point temperature
TDIV_HUM	kgm-2	atmosphere water divergence
TD_2M	unknown	unknown
TD_2M_AV	unknown	unknown
TD_2M_BUZ	K	2m dew point temperature
TD_2M_K	K	2m dew point temperature
TD_2M_OLD	K	old diagnostic based on a effective canopy height
THBS_RAD	unknown	unknown
THBT_RAD	unknown	unknown
THETAE	K	equivalent potential temperature
THETAE_2M	unknown	unknown
THHR_RAD	Ks-1	&
TINC_LH	K	temperature increment due to latent heat
TKE	m2s-2	turbulent kinetic energy
TKETENS	undefined	tendency of turbulent kinetic energy
TKE_CON	undefined	convective turbulent kinetic energy
TKVH	m2s-1	diffusion coefficient of heat
TKVM	m2s-1	diffusion coefficient of momentum
TMAX_2M	unknown	unknown
TMIN_2M	unknown	unknown
TO3	Dobson	vertical integrated ozone content
TOP_CON	1	index of convective cloud top
TOTFORCE_S	unknown	unknown
TOT_CON	kg/m**2	total convective precipitation
TOT_GSP	kg/m**2	total large scale precipitation
TOT_PR	kgm-2s-1	total precipitation rate
TOT_PREC	kgm-2	total precipitation amount
TOT_RAIN	kg/m**2	total precipitation in rain
TOT_SNOW	kg/m**2	total precipitation in snow
TQC	kgm-2	vertical integrated cloud water
TQC_ANAI	kgm-2	cloud water analysis increment
TQG	kgm-2	total graupel content vertically integrated
TQI	kgm-2	vertical integrated cloud ice
TQR	kgm-2	total rain water content vertically integrated
TQS	kgm-2	total snow content vertically integrated
TQV	kgm-2	precipitable water
TQV_ANAI	kgm-2	precipitable water analysis increment
TRACER	undefined	undefined
TRACER_BL	unknown	unknown
TRACER_DD	undefined	undefined
TRACER_WD	undefined	undefined
TRA_SUM	kgm-2	total transpiration from all soil layers
TSUM_S_B	undefined	undefined
TSUM_E_B	undefined	undefined
TTHRES_S_B	undefined	undefined
TTHRES_E_B	undefined	undefined
TTINDEX	K	total-totals index
TTOP_CON	K	temperature at cloud top
TW	degC	wet bulb temperature
TWATER	kgm-2	total water content
TW_2M	unknown	unknown
T_2M	K	2m temperature
T_2M_AV	unknown	unknown
T_2M_BUZ	K	2m temperature
T_2M_K	K	2m temperature
T_2M_OLD	K	old diagnostic based on a effective canopy height
T_2M_S	unknown	unknown
T_ANAI	K	temperature analysis increment

T_B1_LK	K	&
T_BOT_LK	K	&
T_BS_LK	K	&
T_CL	unknown	unknown
T_G	unknown	unknown
T_ICE	K	temperature of ice upper surface
T_M	unknown	unknown
T_MNW_LK	K	mean temperature of water column
T_S	unknown	unknown
T_SNOW	K	snow surface temperature
T_SO	K	soil temperature
T_WML_LK_DD	undefined	undefined
TRACER_WD	undefined	undefined
TRA_SUM	kgm-2	total transpiration from all soil layers
TSUM_S_B	undefined	undefined
TSUM_E_B	undefined	undefined
TTHRES_S_B	undefined	undefined
TTHRES_E_B	undefined	undefined
TTINDEX	K	total-totals index
TTOP_CON	K	temperature at cloud top
TW	degC	wet bulb temperature
TWATER	kgm-2	total water content
TW_2M	missing	missing description
T_2M	K	2m temperature
T_2M_AV	missing	missing description
T_2M_BUZ	K	2m temperature
T_2M_K	K	2m temperature
T_2M_OLD	K	old diagnostic based on a effective canopy height
T_2M_S	missing	missing description
T_ANAI	K	temperature analysis increment
T_B1_LK	K	&
T_BOT_LK	K	&
T_BS_LK	K	&
T_CL	missing	missing description
T_G	missing	missing description
T_ICE	K	temperature of ice upper surface
T_M	missing	missing description
T_MNW_LK	K	mean temperature of water column
T_S	missing	missing description
T_SNOW	K	snow surface temperature
T_SO	K	soil temperature
T_WML_LK	K	mixed layer temperature
Te-132	missing	missing description
Te-132_BL	missing	missing description
Te-132_DD	missing	missing description
Te-132_WD	missing	missing description
U	ms-1	U-component of wind
USTARMAX	m/s	maximum value of u*
U_10M	missing	missing description
U_10M_AV	missing	missing description
V	ms-1	V-component of wind
VB10M_20	s	duration of VBRA_10M above 20 knots
VB10M_25	s	duration of VBRA_10M above 25 knots
VB10M_30	s	duration of VBRA_10M above 30 knots
VB10M_35	s	duration of VBRA_10M above 35 knots
VB10M_40	s	duration of VBRA_10M above 40 knots
VB10M_45	s	duration of VBRA_10M above 45 knots
VB10M_50	s	duration of VBRA_10M above 50 knots
VBRA_10M	missing	missing description
VC10M_20	s	duration of VCON_10M above 20 knots
VC10M_25	s	duration of VCON_10M above 25 knots
VC10M_30	s	duration of VCON_10M above 30 knots
VC10M_35	s	duration of VCON_10M above 35 knots
VC10M_40	s	duration of VCON_10M above 40 knots
VC10M_45	s	duration of VCON_10M above 45 knots
VC10M_50	s	duration of VCON_10M above 50 knots
VCON_10M	missing	missing description
VIO3	Pa	vertical integrated ozone amount
VJPS_10M	missing	missing description
VMAX_10M	missing	missing description
VOLD_10M	missing	missing description
VORTP_ABS	1/s	absolute vorticity
VORTP_REL	1/s	relative vorticity
VTUR_10M	missing	missing description
VW10M_20	s	duration of VWIN_10M above 20 knots
VW10M_25	s	duration of VWIN_10M above 25 knots
VW10M_30	s	duration of VWIN_10M above 30 knots
VW10M_35	s	duration of VWIN_10M above 35 knots
VW10M_40	s	duration of VWIN_10M above 40 knots
VW10M_45	s	duration of VWIN_10M above 45 knots
VW10M_50	s	duration of VWIN_10M above 50 knots
VWIN_10M	missing	missing description
V_10M	missing	missing description
V_10M_AV	missing	missing description
W	ms-1	vertical wind velocity
WSHEARL	1/s	wind shear between surface and 3 km asl
WSHEARM	1/s	wind shear between surface and 6 km asl

WSHEARU	1/s	wind shear between 3 km (or surface) and 6 km asl
W_CL	missing	missing description
W_G1	missing	missing description
W_G2	missing	missing description
W_I	m	canopy water amount
W_SNOW	m	surface snow amount
W_SO	m	soil water content
W_SO_ICE	m	soil frozen water content
Xe-133	missing	missing description
Xe-133_BL	missing	missing description
Xe-133_DD	missing	missing description
Xe-133_WD	missing	missing description
Z0	m	surface roughness length
Z0LOC	m	local surface roughness length
ZHD	undefined	integrated dry atmospheric refractivity
ZTD	undefined	integrated total atmospheric refractivity
ZWD	undefined	integrated wet atmospheric refractivity
Zr-95	missing	missing description
Zr-95_BL	missing	missing description
Zr-95_DD	missing	missing description
Zr-95_WD	missing	missing description