Variables	Frequency	Aggregation	EUP_MP21	EUP_MP22	EUP_MP23	EUP_MP24	Units, ranges	Available at SYSTRAM historical database	Available on CFR, AF reforecast	Available on SPECS	Comments
Air temperature	At 3am, 3pm and 9pm (local time)	point		RET				Yes. (through 23)	Yes. (through maybe)	Yes. (through sec)	
Air temperature	Daily	mean			CSS, vc, tsp, HSD, LEIC	AQUATOOL, E-HYPE, COSM, LPJmL, SURFEX, GUIDS, MORDOR , ICS	VORTEX, EMBA	Yes. (mean32d)	Yes. (maybe)	Yes. (sec)	
Air temperature	Daily	minimum			T< 17°C, C	COSM, GUIDS, SUAL (AQUATOOL), (E-HYPE), MORDOR	GUIDEIS	Yes. (min32d)	Yes. (tmin)	Yes. (tamin)	
Air temperature	Daily	maximum		H, FWI		COSM, GUIDS, SUAL (AQUATOOL), (E-HYPE), MORDOR	GUIDEIS, EMBA	Yes. (max32d)	Yes. (tmax)	Yes. (tamax)	
Air temperature	Monthly	mean				ICS		Yes. (mean30d)	Yes. (maybe)	Yes. (sec)	
Precipitation	Daily	mean			DDP_Hyl	AQUATOOL, COSM, COSM, LPJmL, GUIDS, GUIDS, SUAL, MORDOR , ICS	GUIDEIS, ICS	Yes. (tp)	Yes. (prmean)	Yes. (pr)	Is accumulated or flux, which is preferred?
Precipitation	Monthly					ICS		Yes. (tp)	Yes. (prmean)	Yes. (pr)	
Surface downwelling shortwave flux in air	Daily	mean				COSM, LPJmL, GUIDS, SUAL, MORDOR	GUIDEIS, EMBA, ICS	Yes. (rsnd)	Yes. (dswrfs)	Yes. (rsds)	
Surface downwelling longwave flux in air	Daily	mean				COSM, LPJmL, GUIDS		Yes. (rsnl)	Yes. (dlwrfs)	Yes. (rlds)	
Wind speed (at 10m)	Daily	mean		FWI		COSM, GUIDS, (AQUATOOL), (E-HYPE)	VORTEX, EMBA	Yes. (Derived:10u, 10v)	No. (derived:uas, vas)	Yes. (Derived:uas, vas)	VORTEX and EMBA really exist as components
Wind speed (at 10m)	Daily	maximum			(CUFES)			Yes. (Derived:10u, 10v)	No. (derived:uas, vas)	Yes. (Derived:uas, vas)	
Wind speed (at 10m)	Monthly	mean		CFU				Yes. (Derived:10u, 10v)	No. (derived:uas, vas)	Yes. (Derived:uas, vas)	
Geopotential 500mb	Daily	mean				VORTEX, EMBA		Yes. (z500)	Yes. (hfmean:z500)	No. (proxy: monthly: cp500)	
U component 500mb Wind speed	Daily	mean				VORTEX		Yes. (u500)	Yes. (uvmean500)	No. (Proxy: monthly: ua500)	
V component 500mb Wind speed	Daily	mean				VORTEX		Yes. (v500)	Yes. (uvmean500)	No. (Proxy: monthly: va500)	
U component 500mb wind speed	Daily	mean				VORTEX		Yes. (u500)	Yes. (uvmean500)	No.	
V component 500mb wind speed	Daily	mean				VORTEX		Yes. (v500)	Yes. (uvmean500)	No.	
Geopotential height at 1000mb	Daily	At 12 UTC			MORDOR		Yes. (Derived:z1000)	Yes. (gpm1000)	No.		
Geopotential height at 1000mb	Daily	At 12 UTC			MORDOR		Yes. (Derived:z1000)	Yes. (gpm1000)	No.		
Surface Runoff	Daily	mean			(AQUATOOL)		Yes. (ro)	Yes. (mrro)	No.		
Sea level pressure	Daily	mean				VORTEX	Yes. (msl)	Yes. (mean:msl)	Yes. (psl)		
Dew point temperature	Daily	mean		LEIC	(E-HYPE)		Yes. (Td)	Yes. (Proxy:q2m, tas: maybe, pressure)	Yes. (tdew)		
Total Runoff	Monthly				(AQUATOOL)		Yes. (ro)	No.	Yes. (mrro)	Monthly?	
Downward flux	Daily	mean			(SUEIS), (E-HYPE)		Yes. (rd)	No.	Yes. (prsn)		
Water Evaporation from Soil	Daily				(CUFES)		Yes. (e)	No.	Yes. (Evbs)	Fixed out of? they include transpiration	
Water Evaporation from Soil	Monthly				GUIDS, (AQUATOOL)		Yes. (e)	No.	Yes. (Evbs)	Fixed out of? they include transpiration	
Water Content of Soil Layer	Daily	mean			(CUFES)		Yes. (Derived: wsn1, wsn2, wsn3, wsn4)	No. (Proxy: sm0cm1, sm0cm2, sm0cm3, sm0cm4)	No.	Total?	
Water Content of Soil Layer	Monthly				GUIDS, (AQUATOOL)		Yes. (Derived: wsn1, wsn2, wsn3, wsn4)	No. (Proxy: sm0cm1, sm0cm2, sm0cm3, sm0cm4)	No.	Monthly?	
Sea surface temperature	Daily	mean				VORTEX	Yes. (sst)	No.	No. (Proxy: monthly: sst)		
Sub-surface (ocean) sect	Daily	mean			(AQUATOOL)		Yes. (tsnd)	No.	No.	According to Systram documentation, they are only available from 1980 onwards and 1990 in present	
Geopotential 925mb	Daily	mean				VORTEX, EMBA	Yes. (z925)	No.	No.	No.	
Wind GUST	Daily	maximum			(CUFES)		Yes. (10fg)	No.	No.		
Precipitation	At noon	Accumulation is the best info		FWI			No.	Yes. (prsum)	Yes. (pr)		
Total Soil Moisture Content	Daily	mean			(AQUATOOL)		No. (Proxy:wsn1, wsn2, wsn3, wsn4)	No. (derived:wsn1, wsn2, wsn3, wsn4)	Yes. (mrsos)		
Surface air pressure	Daily	mean			(SUEIS), (E-HYPE)		No. (Proxy:msl)	Yes. (psmsl)	No. (Proxy:psl)		
Surface air pressure	Monthly				(ICS)		No. (Proxy:msl)	Yes. (psmsl)	No. (Proxy:psl)		
Specific humidity	Daily	mean			GUIS, (AQUATOOL), (E-HYPE), (SUAL)		No.	Yes. (q2m)	No.		
Moisture in Upper Portion of Soil Column	Monthly				(AQUATOOL)		No. (Proxy:wsn1)	Yes. (sm0cm1)	No.	What does Upper Portion mean?, Monthly?	
Surface downwelling shortwave flux in air	At 7am, 3pm and 9pm (local time)	point		RET			No. (Proxy: sfcdn, rsnd)	Yes. (Proxy:rsnd)	No.		
Surface downwelling shortwave flux in air	At 7am, 3pm and 9pm (local time)	point		RET			No. (Proxy: sfcdn, rsnd)	Yes. (Proxy:rsnd)	No.		
Sea level mean Pressure	Daily	mean				EMBA	No. (Proxy:msl)	No.	Yes. (slp)		
Relative humidity	At 7am, 3pm and 9pm (local time)	point		RET			No. (Proxy:2d)	No. (Proxy:q2m, tas: maybe, pressure)	No. (Proxy:hfsnd)		
Relative humidity	At noon local standard time or daily mean	point		FWI			No. (Proxy:2d)	No. (Proxy:q2m, tas: maybe, pressure)	No. (Proxy:hfsnd)		
Relative humidity	Daily	mean			COSM, (E-HYPE)		No. (Proxy:2d)	No. (Proxy:q2m, tas: maybe, pressure)	No. (Proxy:hfsnd)		
Wind speed (at 10m)	At 7am, 3pm and 9pm (local time)	point		RET			No. (Proxy:10u, 10v)	No. (derived:uas, vas: maybe)	No. (Proxy:uas, vas)		
Wind speed (at 10m)	At noon local standard time	point		FWI			No. (Proxy:10u, 10v)	No. (derived:uas, vas: maybe)	No. (Proxy:uas, vas)		
Cloudiness (in octas)	At 7am, 3pm and 9pm (local time)	point		RET			No. (Proxy:lcc)	No.	No. (Proxy: cl)		
Relative humidity at 850mb	Daily	mean				VORTEX	No. (Proxy:t,q)	No.	No.		
Closure	Daily	mean				(JULIES)	No. (Proxy:CS: Closure was missing also: t,sol2, Total column solved)	No.	No.	It needs clarification	
Skin temperature	Daily	mean				Minimeteorms		No.	No. (Proxy: tsnpts)	No.	
Air temperature	At noon local standard time	point		FWI			No.	No.	No.	No.	
Low maximum water tracks temperature	Daily	mean				(CUFES)		No.	No.	No.	
High maximum water tracks temperature	Daily	maximum				(CUFES)		No.	No.	No.	
Low minimum water tracks temperature	Daily	minimum				(CUFES)		No.	No.	No.	
Precipitation (hourly rate)	Hourly	maximum				(SUEIS)		Yes.	No.	No.	
Incoming solar radiation (shortwave) to snow	Daily	mean				ICS, (MORDOR)		No.	No.	No.	
Incoming solar radiation (shortwave) to snow	Monthly					ICS		No.	No.	No.	
Incoming solar radiation (shortwave) to snow	Daily	mean				ICS, (MORDOR)		No.	No.	No.	
Incoming solar radiation (shortwave) to snow	Monthly					ICS		No.	No.	No.	
U component 500m wind speed	Daily	mean				VORTEX, EMBA, ICS	No.	No.	No.		
V component 500 mark wind speed	Daily	mean				VORTEX, EMBA, ICS	No.	No.	No.		
Surface snow amount	Daily	mean				(SUEIS)		No.	No.	No.	
Surface moisture	Daily	mean		LEIC				No.	No.	No.	What does it refer to? Humidity? Water in soil?
CLOUD SKY (COVERS) FROM SURFACE DIFFUSE	Daily	mean				ICS, (CUFES)		No.	No.	No.	What does (2) refer to?
CLOUD SKY (COVERS) FROM SURFACE Dir-FLUX	Monthly					ICS		No.	No.	No.	
Water submersion flux	Daily	mean				(E-HYPE)		No.	No.	No.	
LOW SPECIFIC HUMIDITY OVER TILES	Daily	mean				(CUFES)		No.	No.	No.	
GROUND OUTFLOW	Daily	mean				(Minoflow)		No.	No.	No.	This variable needs clarification
Net Heat Transport Heat Transport	Daily	mean				(Minoflow)		No.	No.	No.	What does it mean?
Net Heat Transport Heat Transport	Daily	mean				(Minoflow)		No.	No.	No.	What does it mean?
NET DOWN SURFACE LW RAD FLUX [used for ice]	Daily	mean				(JULIES)		No.	No.	No.	
GRFLUXB FLUX	Daily	mean				(JULIES)		No.	No.	No.	
Heat Transport Heat Transport	Daily	mean				(AQUATOOL)		No.	No.	No.	
Evaporation from Canopy	Daily	mean				(AQUATOOL)		No.	No.	No.	
Transpiration from Canopy	Daily	mean				(AQUATOOL)		No.	No.	No.	
Transpiration from Canopy	Monthly					(AQUATOOL)		No.	No.	No.	Monthly?
Soil Frozen Water Content	Monthly					(AQUATOOL)		No.	No.	No.	Monthly?
Total Radiation (Global Horizontal Radiation)	Daily	mean					(SUEIS), EMBA, ICS	No.	No.	No.	It needs clarification: Horizontal?