

TABLE 2 List of parameters involved in each HBV-light routine

Model Routine	Input data	Parameters	Description	Unit	Range	Output data
-	Precipitation (Pi)	PCALT	Increase of precipitation with height increment	%/100 m	10 – 30	P
-	Temperature (Ti)	TCALT	Decrease of temperature with height increment	°C/100 m	0.6 – 1	T
-	Potential Evapotranspiration (PET)	-	-	mm/ Δt	-	PET
Snow Routine	P and T	TT	Threshold temperature at which the accumulation of precipitation is in the form of snow below it	°C	-2 – 0.5	Snowmelt
		CFMAX	Degree- Δt factor for snow melting that starts if temperatures are above TT.	mm °C ⁻¹ Δt^{-1}	0.5 – 4	
		SP	Seasonal variability in degree- Δt factor	-	0	
		SFCF	Snowfall correction factor	-	0.5 – 0.9	
		CFR	Refreezing coefficient	-	0.05	
		CWH	Water holding capacity of melted water that refreezes again when temperature decrease below TT	-	0.01	
Soil Moisture Routine	P, snowmelt and PET	FC	maximum soil moisture storage	mm	50 – 550	AET, soil moisture and groundwater recharge
		LP	soil moisture value above which actual evapotranspiration (AET) reaches PET.	mm	0.3 – 1	
		BETA	parameter that determines the relative contribution to runoff from rain or snowmelt	-	1 – 5	
Groundwater Routine	Groundwater recharge and PET	UZL	maximum percolation from the STZ to the SUZ	mm	0 – 70	Runoff

Model Routine	Input data	Parameters	Description	Unit	Range	Output data
		K_0	Recession coefficient of STZ	Δt^{-1}	0.1 – 0.5	
		K_1	Recession coefficient of SUZ	Δt^{-1}	0.01 – 0.2	
		K_2	Recession coefficient of SLZ	Δt^{-1}	0.00005 – 0.1	
		PERC	maximum percolation from the SUZ to the SLZ	mm Δt^{-1}	0 – 4	
Routing Routine	Runoff	MAXBAS	Length of triangular weighting function	Δt	1 – 2.5	Simulated runoff