(a)

Abbreviation	Unit	Description	Abbreviation	Unit	Description
Storages			Fluxes (cont.)		
S_{snow}	mm	snow storage	M	$\mathrm{mm\,d^{-1}}$	snowmelt
S_{glacier}	mm	glacier storage	M_{glacier}	$\mathrm{mm\,d^{-1}}$	glacier melt
S_{u}	mm	unsaturated storage, "antecedent soil moisture"	E_{p}	$\mathrm{mm\,d^{-1}}$	potential evapotranspiration
S_{l}	mm	total liquid water availability $= S_{\mathrm{u}} + \mathrm{P_l} + \mathrm{M}$ $(+\mathrm{M_{glacier}})$	E_{a}	$\mathrm{mm\,d^{-1}}$	actual evapotranspiration
S_{f}	mm	fast responding model component	Q_{uf}	$\mathrm{mm\,d^{-1}}$	influx to fast responding model component
S_{s}	mm	slow responding groundwater storage	Q_{up}	$\mathrm{mm\,d^{-1}}$	preferential percolation
Fluxes			Q_{us}	$\mathrm{mm\,d^{-1}}$	percolation
P	$\mathrm{mm\,d^{-1}}$	precipitation	Q_{f}	$\mathrm{mm\,d^{-1}}$	fast runoff
T_{mean}	°C	mean daily temperature	Q_{s}	$\mathrm{mm\,d^{-1}}$	slow runoff
P_{s}	$\mathrm{mm\,d^{-1}}$	solid precipitation, i.e. snow	Q_{mod}	$\mathrm{mm\,d^{-1}}$	modelled total runoff
P_{l}	$\mathrm{mm\,d^{-1}}$	liquid precipitation, i.e. rain	Q_{obs}	$\mathrm{mm\,d^{-1}}$	observed total runoff

(b)

Abbreviation	Unit	Description	Uniform prior parameter distribution		Posterior parameter distribution percentiles		
			lower	upper	5th	50th	95th
T_{temp}	°C	threshold temperature	0.5	1.5	0.8	1.3	1.5
$\mathrm{melt_f}$	$\mathrm{mm\,°C^{-1}\,d^{-1}}$	melt factor	2.5	5	2.7	3.6	4.6
L_{p}	–	transpiration coefficient	0.3	1	0.6	0.8	1.0
$S_{\mathrm{u,max}}$	mm	unsaturated storage capacity	40	300	218	276	297
β	–	shape parameter	0.1	1	0.3	0.6	1.0
P_{max}	$\mathrm{mm\,d^{-1}}$	percolation capacity	0.1	4	1.1	1.7	2.5
D	–	partitioning coefficient	0	1	0.1	0.7	1.0
K_f	$\mathrm{d^{-1}}$	storage coefficient	0.05	3	0.1	0.3	2.4
K_{s}	$\mathrm{d^{-1}}$	storage coefficient	0.001	0.3	0.05	0.09	0.14