

	O horizon	E horizon	B1 horizon	B2 horizon
Soil layer thickness (cm)	5	5	20	15
Bulk density (kg m^{-3})	156	773	749	836
Annual discharge ($\text{m}^3 \text{m}^{-2}$)	0.55	0.5	0.45	0.45
Soil moisture ($\text{m}^3 \text{m}^{-3}$)	0.3	0.3	0.3	0.3
Temperature ($^{\circ}\text{C}$)	8	8	8	8
Organic C (g kg^{-1})	400	50	60	50
SO ₄ adsorption	None	none	some ^a	some ^a
DOC (mg L^{-1})	35	12.6	9.8	9.8
Dissolved NO ₃ ⁻ ($\mu\text{mol L}^{-1}$)	0.5	0.4	0.4	0.4
Dissolved NH ₄ ⁺ ($\mu\text{mol L}^{-1}$)	0.5	2.6	4.2	4.2
CO ₂ pressure (atm)	1×10^{-3}	2×10^{-3}	7×10^{-3}	1×10^{-2}
$\log^* K_s$, Al(OH) ₃ (s) ^b	-4.2	-7.7	-9.4	-9.4
PROFILE parameters				
Mineral surface area ($\text{m}^2 \text{g}^{-1}$)	0	1.2	1.1	2.0
K feldspar (%)	0	15	18	19
Plagioclase (%)	0	14	15	16
Hornblende (%)	0	0.5	1.5	1.5
Epidote (%)	0	0.5	0.75	1.0
Garnet (%)	0	0.1	0.1	0.1
Biotite (%)	0	0.5	0.5	0.5
Chlorite (%)	0	0.4	0.4	0.4
Vermiculite (%)	0	3.0	15	5.0
Apatite (%)	0	0.1	0.2	0.3
Parameters specific for ion-exchange model^c				
CEC ($\text{cmol}_c \text{kg}^{-1}$)	18.7/23.9	3.62/4.85	4.89/6.49	4.73/5.61
$\log K_{\text{GT,Al-Ca}}$	-5.15/ -5.04	-3.50/ -3.38	-1.54/ -1.42	0.13/0.20
$\log K_{\text{GT,Al-Mg}}$	-3.50/ -2.43	-1.11/ -0.99	0.48/0.60	2.31/2.38
$\log K_{\text{GT,Al-Na}}$	-1.54/ -1.33	-1.00/ -0.74	-0.35/ -0.10	0.35/0.50
$\log K_{\text{GT,Al-K}}$	-6.41/ -6.20	-6.32/ -6.07	-4.72/ -4.47	-4.11/ -3.96
$\log K_{\text{GT,Al-H}}$	-/ -4.80	-/ -6.76	-/ -7.73	-/ -7.11
Parameters specific for SHM				
Active humic acid (g kg^{-1})	180	25	22.5	22.5
Active fulvic acid (g kg^{-1})	60	25	22.5	22.5
Geochemically active Al (mmol kg^{-1})	40	50	80	80