Catflow

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	loamy sand: 43 sandy clay loam: 39
	Residual	ϑ_r	(%v/v)	loamy sand: 5.7 sandy clay loam: 7.0
	Field-capacity	ϑ_T	(%v/v)	
Root zone	Depth	D_{RZ}	(cm)	50
Sub-surface flow	Soil class			loamy sand /sandy clay loam
	Soil depth	D	(cm)	200
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	loamy sand: 146 sandy clay loam: 13
	Parameter of the hydraulic conductivity function	α_s	(1/m)	loamy sand: 12.40 sandy clay loam: 5.90
		n_{vG}	-	loamy sand: 2.28 sandy clay loam: 1.48
		α_m	-	
Porosity	Total	n	-	loamy sand: 0.43 sandy clay loam: 0.39
	Drainable	n_o	-	loamy sand: 0.37 sandy clay loam: 0.32
Vegetation	LAI		(m^2/m^2)	1-2 (depending on season) coverage 5%
	Vegetation height		(cm)	13-40 (depending on season)
	Stomatal resistance		(s/m)	200

CMF

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	30 - 45%
	Residual	ϑ_r	(%v/v)	4.5 - 9.0%
	Field-capacity	ϑ_T	(%v/v)	16.5 - 24.0 %
Root zone	Depth	D_{RZ}	(cm)	0.1
Sub-surface flow	Soil class			
	Soil depth	D	(cm)	10 - 365[(1)]
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	416.7
	Parameter of the hydraulic conductivity function	b	-	2.7 - 6.8[(3)]
		n_{vG}	-	1.15-1.37
Porosity	Total	n	-	0.3 - 0.45
	Drainable	n_o	-	-
Vegetation	LAI		(m^2/m^2)	0.1
	Vegetation height		(cm)	10
	Stomatal resistance		(s/m)	100

CoupModel

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	43[4]
	Residual	ϑ_r	(%v/v)	4.8
	Field-capacity	ϑ_T	(%v/v)	12.5
Root zone	Depth	D_{RZ}	(cm)	30
Sub-surface flow	Soil class			Swedish sand[4]
	Soil depth	D	(cm)	50-350, mean value: 201[1]
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	84
	Parameter of the hydraulic conductivity function (****)	n	-	1[3]
		λ	-	0.42[3]
		n_{vG}		1.42[4]
Porosity	Total	n	-	43
	Drainable	n_o	-	31.5
Vegetation	LAI seasonal maximum		(m^2/m^2)	0; 0.5; 1[2]
	Vegetation height		(cm)	0.1; 0.2; 0.4[2]
	Minimum Stomatal resistance		(s/m)	50

Hill-Vi

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	Mean: 38.2 Max: 44.2 Min: 37.7
	Residual	ϑ_r	(%v/v)	Mean: 4.7 Max: 5.4 Min: 3.6
	Field-capacity	ϑ_T	(%v/v)	Mean: 13.7 Max: 23.6 Min: 6.23
Root zone	Depth	D_{RZ}	(cm)	was not defined
Sub-surface flow	Soil class			was not specified
	Soil depth	D	(cm)	Mean: 210.6[(1)] Max: 370.0 Min: 0.5
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	Mean: 90.5 Max: 387.8 Min: 18.4
	Parameter of the hydraulic conductivity function	α_s	-	Mean: 0.036 Max: 0.044 Min: 0.032
		n	-	Mean: 1.92 Max: 3.57 Min: 1.37
		l	-	Mean: -0.91 Max: -0.83 Min: -1.08
Porosity	Total	n	-	Mean: 0.382 Max: 0.44 Min: 0.38
	Drainable	n_o	-	Mean: 0.23 Max: 0.31 Min: 0.07
Vegetation	LAI		(m^2/m^2)	Vegetation was not considered
	Vegetation height		(cm)	
	Stomatal resistance		(s/m)	

HYDRUS-2D

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	38.1
	Residual	ϑ_r	(%v/v)	4.8
	Field-capacity (ϑ for h = -0.3 m)	ϑ_T	(%v/v)	28.0
Root zone	Depth	D_{RZ}	(cm)	no root zone considered
Sub-surface flow	Soil class			loamy sand
	Soil depth	D	(cm)	190
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	53.8
	Parameter of the hydraulic conductivity function (van Genuchten model)	α	-	Max: 3.54 Min: 1.59
		n_{vG}	-	Max: 1.88 Min: 1.15
		l	-	Max: -0.78 Min: 0.5
Porosity	Total	n	-	38.1
	Drainable (ϑ_s - ϑ_T)	n_o	-	10.1
Vegetation	LAI		(m^2/m^2)	Vegetation was not considered
	Vegetation height		(cm)	
	Stomatal resistance		(s/m)	

NetThales

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	35
	Residual	ϑ_r	(%v/v)	6
	Field-capacity	ϑ_T	(%v/v)	17
Root zone	Depth	D_{RZ}	(cm)	30
Sub-surface flow	Soil class			1
	Soil depth	D	(cm)	Variable(1)
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	50
	Parameter of the hydraulic conductivity function	α_s	-	7
		n_{vG}	-	0
		α_m	-	0
Porosity	Total	n	-	
	Drainable	n_o	-	
Vegetation	LAI		(m^2/m^2)	
	Vegetation height		(cm)	
	Stomatal resistance		(s/m)	

SIMULAT

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	Mean: 27.7 Max: 31.1 Min: 25.2
	Residual	ϑ_r	(%v/v)	Mean: 6.4 Max: 8.6 Min: 4.7
	Field-capacity	ϑ_T	(%v/v)	-
Root zone	Depth	D_{RZ}	(cm)	0; 10; 20[(2)]
Sub-surface flow	Soil class			125
	Soil depth	D	(cm)	Variable[(1)]
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	Mean: 60.8 Max: 129.6 Min: 12.7
	Parameter of the hydraulic conductivity function	ψ_b	(cm)	Mean: 10.2 Max: 15.2 Min: 8.2
		λ	-	Mean: 0.49 Max: 0.57 Min: 0.36
		n_{vG}	-	Mean: 1.96 Max: 2.33 Min: 1.56
		α_m	-	
Porosity	Total	n	-	Mean: 0.343 Max: 0.36 Min: 0.33
	Drainable	n_o	-	
Vegetation	LAI		(m^2/m^2)	Mean: 0; 0.55; 0.143[(2)] Max: 0, 0.34; 0.95[(2)] Min: 0; 0.01; 0.02[(2)]
	Vegetation height		(cm)	0; 10; 15[(2)]
	Stomatal resistance		(s/m)	50 (minimum)

SWAT

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	
	Residual	ϑ_r	(%v/v)	
	Field-capacity	ϑ_T	(%v/v)	Mean: 13.5% Max: 22% Min: 9%
Root zone	Depth	D_{RZ}	(cm)	Assessed as equal to soil depth but also controlled by plant parameters (here 0.73m)
Sub-surface flow	Soil class			hydrological group A
	Soil depth	D	(cm)	Variable[(1)] Nearest neighbour method from 20*20 samples
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	Mean: 74.5 Max: 119.6 Min: 26.9
Porosity	Total	n	-	~ 0.35 (weak differences between the soil layers)
	Drainable	n_o	-	available water capacity (difference between wilting point and field capacity): Mean: 0.09 Max: 0.117 Min: 0.076
Vegetation	LAI		(m^2/m^2)	maximum potential: 2.68
	Vegetation height		(cm)	potential maximum canopy height: 50
	Stomatal resistance		(s/m)	0.028

Topmodel

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	NA
	Residual	ϑ_r	(%v/v)	NA
	Field-capacity	ϑ_T	(%v/v)	NA
Root zone	Depth	D_{RZ}	(cm)	10
Sub-surface flow	Soil class			sandy
	Soil depth	D	(cm)	181
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	58
	Exponential transmissivity function	T_0	(m^2/h)	0.080
			(m)	0.01
Porosity	Total	n	-	0.4
	Drainable	n_o	-	0.4
Vegetation	LAI		(m^2/m^2)	Vegetation was not considered
	Vegetation height		(cm)	
	Stomatal resistance		(s/m)	

WaSiM-ETH

Soil moisture content thresholds	Saturated	ϑ_s	(%v/v)	0.38
	Residual	ϑ_r	(%v/v)	0.06
	Field-capacity	ϑ_T	(%v/v)	0.22
Root zone	Depth	D_{RZ}	(cm)	0.01
Sub-surface flow	Soil class			St2
	Soil depth	D	(cm)	300
	Saturated hydraulic conductivity	K_{sat}	(mm/h)	118
	Parameter of the hydraulic conductivity function	α_s	(1/hPa)	12.24
		n_{vG}	-	1.13
Porosity	Total	n	-	0.42
	Drainable	n_o	-	0.36
Vegetation	LAI		(m^2/m^2)	0.01
	Vegetation height		(cm)	0.01
	Stomata resistance		(s/m)	0.01
	Vegetation cover		%	0.01
	Surface resistance		(s/m)	150
	Albedo		%	35
	Interception capacity		mm	0.2

(1) data from surface and basement DEM
(2) First value 2006, second 2007, third 2008
(3) Brooks-Corey retention curve shape parameter:
Matric potential - water content relation

$$\Psi_m(\vartheta) = \Psi_T \left(\frac{\vartheta - \vartheta_r}{\vartheta_s - \vartheta_r} \right)^{-b}$$

Conductivity - water content relation

$$k(\vartheta) = k_s \left(\frac{\vartheta - \vartheta_r}{\vartheta_s - \vartheta_r} \right)^{2+3b}$$

(4) Parameter estimations based on 60 Swedish sand profiles (Lundmark and Jansson, 2009)
(5) Hydraulic conductivity function $k_w = k_s S_e \left(n + 2 + 2/\lambda \right)$ (Mualem, 1976)
(6) Comparable value: van Genuchten parameter (n_{vG} = n)