

Figure S1. Soil properties with depth at monitoring locations. Soil bulk density ( $\text{g cm}^{-3}$ ) measured in (a) upslope and (b) downslope zones. Near-saturation hydraulic conductivity ( $h=0.5$  cm) measured in (c) upslope and (d) downslope zones. Root density ( $\text{cm}^2 \text{ m}^{-2}$  soil) in (e) upslope and (f) downslope zones.

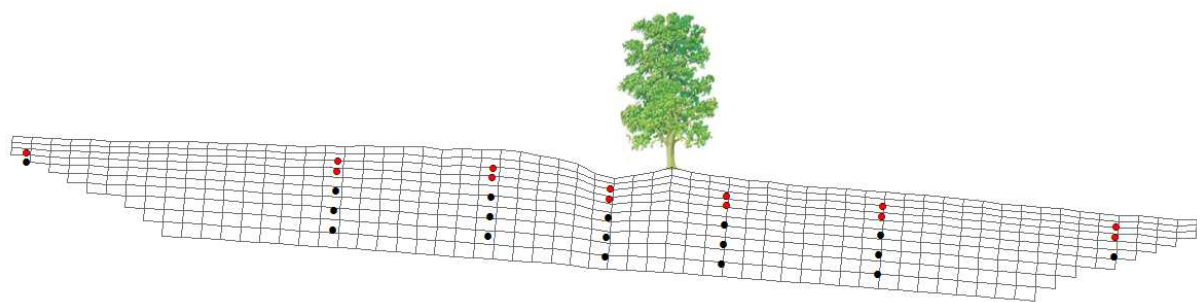


Figure S2. Rectangular meshing extension of the 2D ER map. Each grid was defined by its corner coordinates. Circles indicates tensiometers location for 25 and 50 cm depth (red circles); and for 100, 150 and 200 cm depth (black circles).

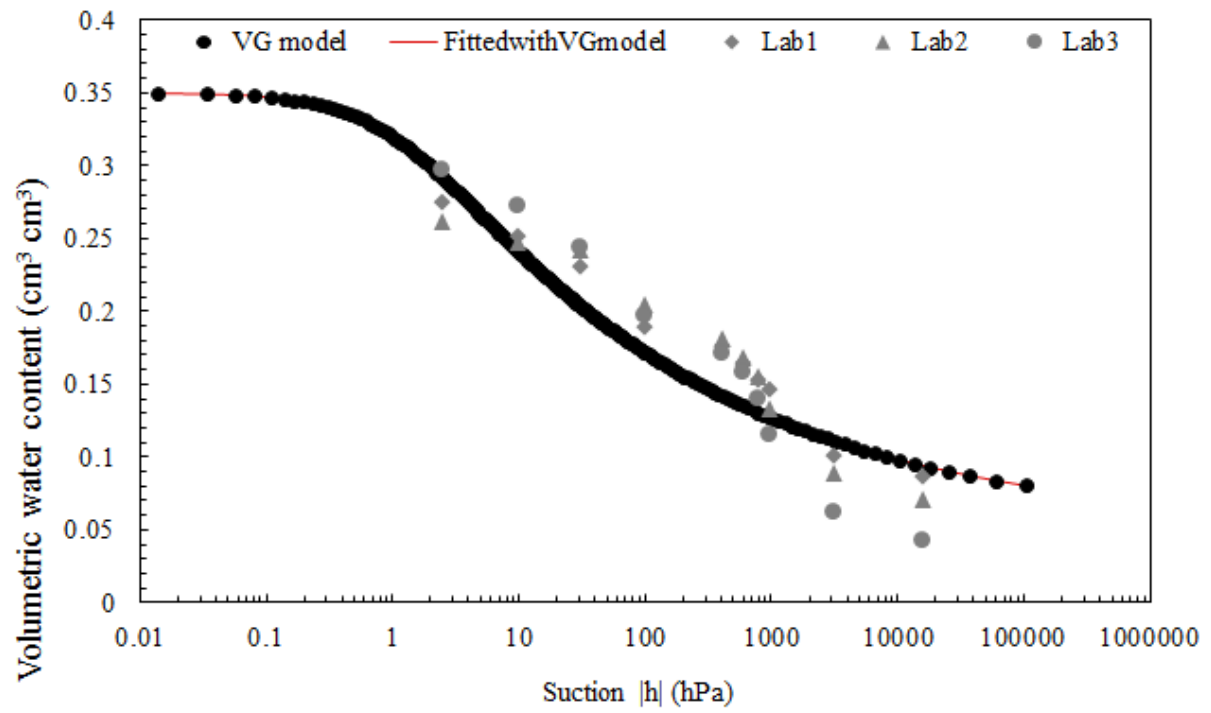


Figure S3. Experimental retention curve (gray symbols) fitted by a Van Genuchten model (black circle).

Table S1 : Van Genuchten parameters used to fit experimental retention curve.

$\theta_s$	$\theta_r$	theta	n
0.4	0.01	0.9	1.3