Supporting Information for "Estimating time-dependent vegetation biases in the SMAP soil moisture product"

S. Zwieback, A. Colliander, M. Cosh, J. Martínez-Fernández, H. McNairn, P. Starks, M. Thibeault, A. Berg

January 14, 2018

Table S1: Sensitivity to model assumptions explored using simulations. Each scenario deviates from the baseline with respect to the data generation (forward simulation) or the configuration of the probabilistic model.

	Change to forward simulation	Change to probabilistic model
Soil moisture		
moisture seasonal	–	time-variant logistic model
Errors		
t error	$\varepsilon \sim T(0, \sigma^2; 6)$	$\varepsilon \sim T(0, \sigma^2; 6)$
t error simulation	$\varepsilon \sim T(0, \sigma^2; 6)$	–
t error inference	–	$\varepsilon \sim T(0, \sigma^2; 6)$
autocorrelation	autocorrelation $\rho_1 = 0.5$	–
Prior distribution		
prior tails	–	10 degrees of freedom
prior scale	–	priors scaled up by 2
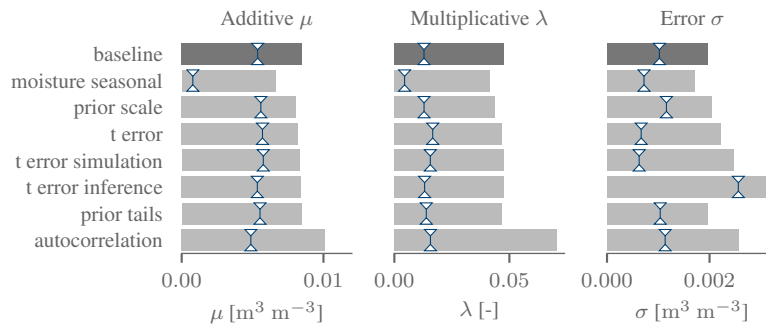
Figure S1: RMSE (bars) and bias (notches) obtained in the simulation study (500 samples) for the variable additive bias parameter μ, the variable sensitivity parameter λ [-], and σ. The scenarios deviate from the baseline to explore the sensitivity to specific assumptions.