



Supplement of

Soil moisture monitoring with cosmogenic neutrons: an asset for the development and assessment of soil moisture products in the state of Brandenburg (Germany)

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S1. Resulting soil hydraulic parameters

The following table S1 shows the soil texture values, resulting soil hydraulic parameters and the calibration metrics obtained from the calibration (fine-tuning of sand content) of the SWAP model as outlined in section 2.5 of the main manuscript. The validation metrics are presented in the main manuscript.

Table S1. Adjusted soil hydraulic parameters for the soil hydraulic model at the different locations. The column block "Soil texture" documents the ranges of sand, silt and clay contents for the soil texture classes SI2, mSfs, and fSms (BGR, 2005), and the adjusted sand, silt and clay contents as obtained by fine-tuning the sand content. The column block "SHP" quantifies the resulting values for the soil-hydraulic properties. The block "Metrics" shows the corresponding model performance metrics (NSE: Nash-Sutcliffe Efficiency, RMSE: root mean squared error, PBIAS: percent bias).

ID	Soil texture		SHP					Metrics		
	class from soil map and S, U, T ranges (%)	S, U, T adjusted (%)	θ_r (m ³ m ⁻³)	θ_s (m ³ m ⁻³)	α (cm ⁻¹)	n (-)	K _s (cm d ⁻¹)	NSE	RMSE (m ³ m ⁻³)	PBIAS (%)
BOO	SI2: 67-85, 10-25, 5-8	75,20,5	0.057	0.392	0.019	1.645	115.8	0.12	0.040	-18.1
DED		75,20,5	0.057	0.392	0.019	1.645	115.8	0.70	0.021	-1.3
MQ		83,12,5	0.057	0.398	0.023	1.837	202.8	0.70	0.029	8.0
LIN		75,20,5	0.057	0.392	0.019	1.645	115.8	0.64	0.037	-2.9
OEH		85,10,5	0.057	0.400	0.024	1.940	253.9	0.63	0.022	9.0
KH	mSfs: 85-100, 0-10, 0-5	89,07,5	0.057	0.402	0.026	2.153	368.9	0.32	0.019	1.1
GOL	fSms: 65-75, 20-35, 0-5	75,20,5	0.057	0.392	0.019	1.645	115.2	-0.22	0.034	7.5
PAU		65,30,5	0.057	0.385	0.015	1.544	72.0	0.40	0.042	-1.8

5 References

BGR: Bundesanstalt für Geowissenschaften und Rohstoffe (Ed.), Manual of soil mapping, 5th Ed. (KA5), Hanover, Germany, ISBN: 978-3-510-95920-4, 2005.