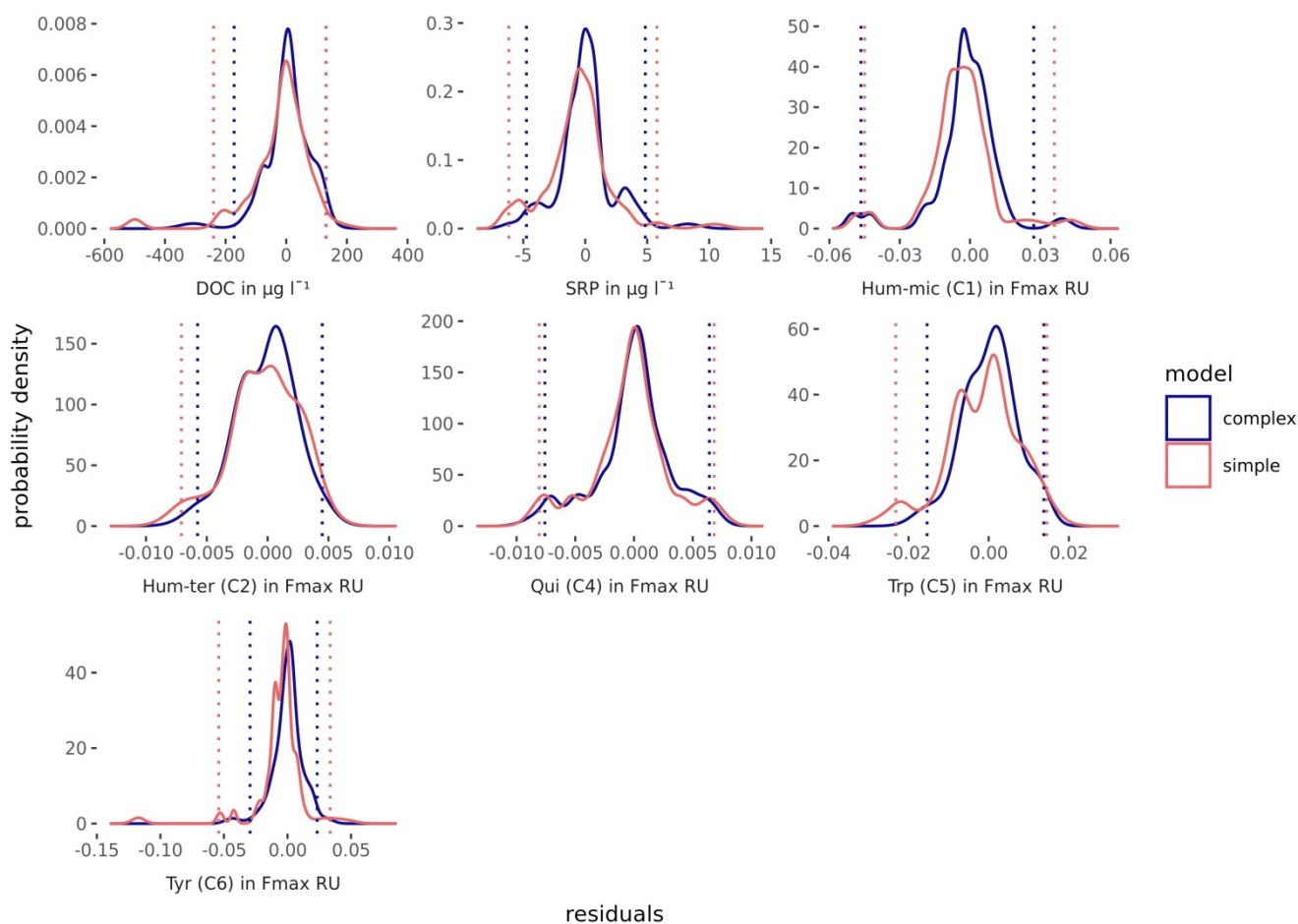


Table S1: Samplings, dates, discharge, concentrations of nutrients and fluorescences (additionally in %) of DOM PARAFAC components. Additionally introduced amounts are calculated from expected ambient and measured values at the listed dates.

source	date	code	discharge	DOC	P-PO ₄	N-NO ₃	N-NO ₂	N-NH ₄	Hum-mic (C1)		Hum-ter (C2)		Hum-micter (C3)		Qui (C4)		Trp (C5)		Tyr (C6)		
									Fmax RU	%	Fmax RU	%	Fmax RU	%	Fmax RU	%	Fmax RU	%	Fmax RU	%	
ambient																					
none	2018-07-16	A	0.93	1301	9.4	2548	11.1	10.9	0.53	44	0.21	17	0.24	20	0.08	6	0.13	10	0.02	2	
none	2018-07-23	C	0.73	1459	13.9	1890	12.9	10.2	0.56	42	0.26	20	0.27	20	0.09	7	0.11	8	0.03	2	
none	2018-07-30	F	0.69	1279	11.2	1963	10.4	9.5	0.54	44	0.23	19	0.26	21	0.09	7	0.11	9	0.01	0	
none	2018-08-06	I	0.67	1420	18.8	2194	11.3	13.4	0.57	43	0.25	19	0.27	20	0.10	7	0.13	10	0.01	1	
none	2018-08-13	L	0.47	1257	11.3	1893	7.8	10.5	0.54	43	0.23	18	0.25	20	0.09	7	0.13	10	0.01	1	
none	2018-08-20	O	0.41	1229	3.3	1640	5.4	0.9	0.51	44	0.21	18	0.24	20	0.08	7	0.12	10	0.01	1	
material additionally introduced during leachate additions																					
corn	2018-08-07	J	0.58	403	4.9	75	0.2	0.0	0.00	0	0.00	0	0.00	0	0.00	0	0.07	59	0.05	41	
corn	2018-08-14	M	0.82	1534	19.5	25	0.8	0.0	0.03	19	0.01	9	0.01	4	0.02	12	0.04	25	0.05	31	
cow dung	2018-07-19	B	0.80	2284	62.0	0	5.9	60.4	0.20	28	0.09	12	0.08	11	0.11	16	0.12	17	0.12	16	
cow dung	2018-07-26	E	0.64	1235	31.5	710	1.1	0.0	0.15	19	0.02	3	0.02	3	0.04	5	0.12	15	0.45	56	
leaves	2018-07-24	D	0.60	272	2.6	193	3.8	1.5	0.28	26	0.00	0	0.00	0	0.03	3	0.57	54	0.18	17	
leaves	2018-07-31	G	0.41	1225	25.2	707	0.0	0.4	0.59	67	0.00	0	0.00	0	0.08	9	0.03	4	0.17	20	
nettles	2018-08-16	N	0.44	148	2.3	92	51.4	23.0	0.00	0	0.00	0	0.00	0	0.01	15	0.01	35	0.02	49	
nettles	2018-08-21	Q	0.38	188	8.5	252	33.8	26.9	0.04	18	0.01	5	0.01	3	0.02	10	0.05	26	0.07	37	
pig dung	2018-08-02	H	0.46	469	37.6	157	5.5	45.1	0.09	25	0.06	16	0.03	9	0.01	3	0.06	17	0.11	29	
pig dung	2018-08-09	K	0.72	251	49.0	193	5.0	62.3	0.05	25	0.02	10	0.02	10	0.02	9	0.05	27	0.03	19	

5 **Table S2: Correlation of nutrient and DOM fraction uptake velocity v_i ; Bayes factor in brackets; only shown, if Bayes factor > 1.**

	Hum-micter (C3)	Qui (C4)	Tyr (C6)
Trp (C5)	0.78 (2.98)	0.50 (1.31)	
Tyr (C6)		0.66 (6.10)	
DOC		0.58 (4.63)	0.41 (1.36)



10 **Figure S1: Probability density of the residuals for DOC, SRP and five of the six PARAFAC components. Comparison of two models: the simple model is according to Eq. (4), the complex one is the best performing model found, which is a mixed model including the leachate source (DOC), a mixed model including the sampling (Trp (C5) and Tyr (C6)) or the interaction models from table 5 (SRP, Hum-mic(C1), Hum-ter (C2), Qui (C4)). The dotted vertical lines are the boundaries of the 95% probability density interval. The probability density interval is smaller for better performing models.**