Table 1. Summary of experimental results. R is the rain rate, T is the water temperature and Sc_{O_2} is the Schmidt number of oxygen at temperature T. ϵ_{Back}, ϵ_{Total} and ϵ_{Rain} are the background (estimated during no-rain periods), the total (estimated during rain), and the rain-induced turbulent dissipation rates, respectively, estimated at 6.5 cm depth. k_{600_Back}, k_{600} and k_{600_mod} are the background (estimated during no rain periods), total (estimated during rain) and the model-predicted gas transfer velocities (equation (15)), respectively. F_{KE} is the estimated kinetic energy flux of rain. Note that ϵ_{Back} and ϵ_{Rain} for rain rates of 10.3 and 13.5 mm h^{-1} could not be determined (ND) due to poor video quality in the measurements without rain.

Run	R [mm h^{-1}]	T [°C]	Sc_{O_2}	ϵ_{Back} [W kg^{-1}]	ϵ_{Total} [W kg^{-1}]	ϵ_{Rain} [W kg^{-1}]	$\frac{\epsilon_{Rain}}{\epsilon_{Total}}$	k_{600_Back} [cm h^{-1}]	k_{600} [cm h^{-1}]	k_{600_mod} [cm h^{-1}]	F_{KE} [W m^{-2}]
1	6.90	16.9 ± 0.054	623	1.3×10^{-8}	2.4×10^{-8}	1.1×10^{-8}	44%	0.820	2.99	11.2	0.0667
2	8.05	17.1 ± 0.055	615	1.3×10^{-8}	3.0×10^{-8}	1.6×10^{-8}	55%	0.820	6.97	12.0	0.0775
3	10.3	9.48 ± 0.030	927	ND	3.2×10^{-8}	ND	ND	-0.058	8.29	14.4	0.0992
4	13.5	9.35 ± 0.027	933	ND	8.1×10^{-8}	ND	ND	-0.058	22.0	16.5	0.130
5	16.0	9.13 ± 0.737	945	1.1×10^{-8}	1.1×10^{-7}	9.5×10^{-8}*	90%	4.295	48.2*	18.0	0.154
6	16.2	8.59 ± 0.020	973	5.8×10^{-9}	1.0×10^{-7}	2.5×10^{-8}	81%	0.202	28.2	20.8	0.211
7	21.1	8.36 ± 0.016	979	5.8×10^{-9}	3.0×10^{-8}	9.8×10^{-8}	94%	0.202	15.6	18.2	0.168
8	19.8	8.49 ± 0.021	986	5.8×10^{-9}	2.4×10^{-7}	2.3×10^{-7}	98%	0.202	16.7	20.1	0.227
9	25.0	16.8 ± 0.062	624	7.5×10^{-9}	7.6×10^{-8}	6.8×10^{-8}	90%	-0.639	18.0	21.4	0.241
10	26.0	11.0 ± 0.010	852	6.9×10^{-9}	7.6×10^{-8}	6.9×10^{-8}	91%	3.632	25.6	22.7	0.250
11	28.8	17.4 ± 0.087	607	7.5×10^{-9}	9.8×10^{-8}	9.1×10^{-8}	92%	-0.639	19.3	22.9	0.277
12	39.4	11.1 ± 0.013	849	6.9×10^{-9}	3.1×10^{-7}	3.1×10^{-7}	98%	3.632	30.3	28.0	0.380
13	48.9	17.8 ± 0.146	593	7.5×10^{-9}	2.7×10^{-7}	2.6×10^{-7}	97%	-0.639	25.3	29.9	0.471
14	88.9	18.5 ± 0.220	572	7.5×10^{-9}	3.8×10^{-7}	3.7×10^{-7}	98%	-0.639	46.5	40.3	0.856

* marks an outlier that caused the run with 16 mm h^{-1} to be excluded from the subsequent analysis