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Turbulence statistics from optical whole-field measurements in particle-laden turbulence

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Due to an oversight a part of Table 2 was omitted. The complete table is reproduced below.

Table 1 Summary of single-phase PIV results at the five measurement locations, LDA results at $r0$ shown for reference in the third column. In the fourth column, the PIV results at the first location are shown with the 95% confidence interval.

		$r0$ LDA	$r0$ PIV	$r1$ PIV	$r2$ PIV	$r3$ PIV	$r4$ PIV
Downstream distance	z/M	42.9	42.9	56.3	70.0	86.3	100
Turbulence intensity	$I \equiv u'/U$ (%)	2.1	2.0 ± 0.04	1.6	1.4	1.3	1.2
Integral/macro length scale	Λ ($\times 10^{-3}$ m)	4.7	4.9 ± 0.37	5.7	6.0	6.7	7.4
Streamwise r.m.s. of fluctuations	u' ($\times 10^{-3}$ m/s)	10.6	10.8 ± 0.22	8.8	7.7	6.9	6.2
Transverse r.m.s. of fluctuations	v' ($\times 10^{-3}$ m/s)	10.1	10.1 ± 0.14	8.6	7.6	6.7	6.1
Anisotropy	u'/v'	1.05	1.06 ± 0.019	1.02	1.01	1.04	1.02
Eddy turn-over time, Λ/u'	T (s)	0.44	0.45 ± 0.038	0.65	0.78	0.97	1.16
Dissipation rate, from decay	ε ($\times 10^{-5}$ m^2/s^3)	15.7	18.9 ± 1.76	11.4	7.14	4.42	3.19
Dissipation rate, from λ_g	ε ($\times 10^{-5}$ m^2/s^3)	20.0	22.3	12.1	7.22	4.71	3.16
Kolmogorov length scale	λ_k ($\times 10^{-3}$ m)	0.28	0.27 ± 0.007	0.31	0.34	0.39	0.42
Kolmogorov velocity scale	u_k ($\times 10^{-3}$ m/s)	3.5	3.7 ± 0.09	3.3	2.9	2.6	2.4
Kolmogorov time scale	τ_k ($\times 10^{-3}$ s)	80	73 ± 3.9	94	118	150	177
Taylor micro scale	λ_g ($\times 10^{-3}$ m)	2.9	2.8 ± 0.025	3.1	3.5	3.9	4.3
Reynolds number	Re_λ	29.5	28.8 ± 0.74	27.0	26.3	25.7	27.1

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