Real-Time Flow Measurement System: Physics-Informed Reconstruction and Sampling Strategy – Appendix

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Full error statistics of the experiment discussed in the manuscript.

(a) Error of C.T. and Steady T. (b) Error of C.T. and Moving T. (c) Error of Moving T. and Steady T.
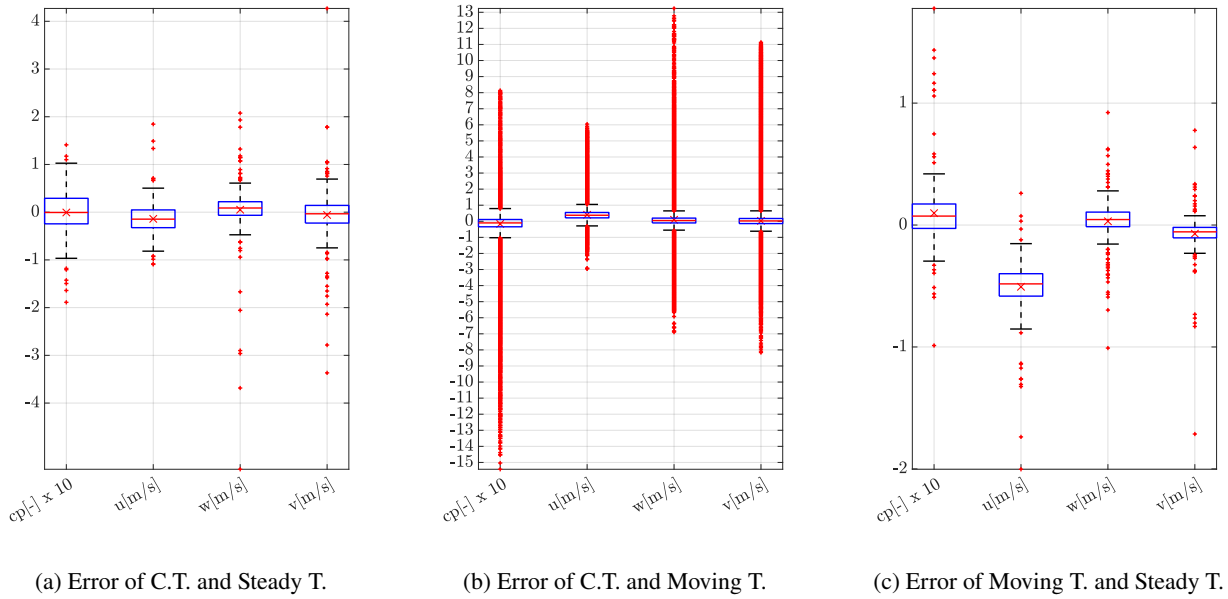
Figure 1: Box-Whisker plots of error statistics of the COMTree (C.T.) predictions compared to the measurement of the moving traverse (Moving T.) and steady traverse (Steady T.) for pressure coefficient and Cartesian velocity components of the flow field. The measurement statistics are calculated from 250 samples for the steady traverse and 52'275 in the case of the moving traverse.)

Table 1: Error statistics of the COMTree (C.T.) predictions compared to the measurement of the moving traverse (Moving T.) and steady traverse (Steady T.) for pressure coefficient and Cartesian velocity components of the flow field. The measurement statistics are calculated from 250 samples for the steady traverse and 52'275 in the case of the moving traverse. All measures follow Gaussian distributions without anomalies. For better interpretability, the velocities are given in dimensional units.

Field Quantity	Error Statistic	C.T. vs Steady T.	C.T. vs Moving T.	Moving T. vs Steady T.
Cp [-]	Mean	-6.2e-4	-0.0162	0.0098
Cp [-]	STD	0.04	0.064	0.02
Cp [-]	Max.	0.14	0.81	0.17
Velocity X [m/s]	Mean	-0.14	0.4	-0.51
Velocity X [m/s]	STD	0.37	0.39	0.22
Velocity X [m/s]	Max.	1.84	6.0	0.26
Velocity Y [m/s]	Mean	0.05	0.09	0.03
Velocity Y [m/s]	STD	0.65	0.63	0.19
Velocity Y [m/s]	Max.	2.08	13.24	0.92
Velocity Z [m/s]	Mean	0.06	0.03	-0.07
Velocity Z [m/s]	STD	0.61	0.68	0.18
Velocity Z [m/s]	Max.	4.2	11.13	0.77