

Dataset	# cams	Rel cam diff	Mean loc	Median loc	Mean rot	Median rot	Prev time	time
NYC	127	0.0516	1.1216	0.6134	2.5245	1.4892	4465	1365.17
Alamo	224	0.0285	3.6144	2.7876	1.3818	0.9502	17513	1547.51
Yorkminster	196	0.0439	1.5092	0.8737	2.2639	1.5853	13115	1516.64
Notre Dame	214	0.0438	0.6742	0.4205	1.0933	0.8108	17430	1224.74
Montreal N.D.	162	0.0176	0.4288	0.2621	0.7621	0.5691	7241	948.40
Ellis Island	194	0.1517	14.8342	12.6637	4.7399	1.6037	13816	1437.00
Piazza Del Popolo	185	0.0260	0.7262	0.3927	1.1542	0.7276	13531	1774.64

**Table 1.** Distributed Synchronization Results for Photo Tourism. Please compare with prior results in tables 2 and 3 in the submitted paper.

Rel. Noise	C.R.	m. loc	me. loc	m. rot	me. rot
0	1	0	0	0	0
15	1	0.3866	0.3826	0.1966	0.1826
30	1	3.0159	2.9807	1.4217	1.4592
20	70	0.7598	0.7184	0.3372	0.2818
20	50	0.8356	0.7227	0.4425	0.3831
20	30	1.1982	1.2798	0.6168	0.6093

**Table 3 (Left).** A sensitivity analysis on 20 cameras generated synthetically. m. is mean, and me. is median.

**Table 2 (Right).** BATA initialized with MPLS on Photo Tourism dataset on the same subsets as in the paper.

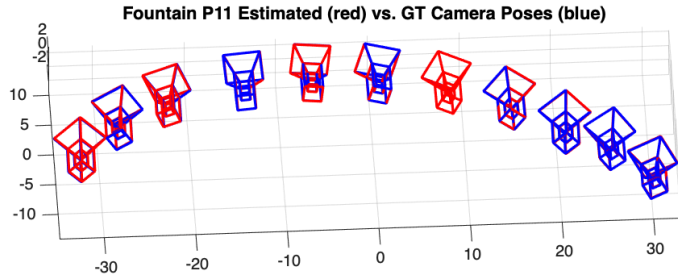
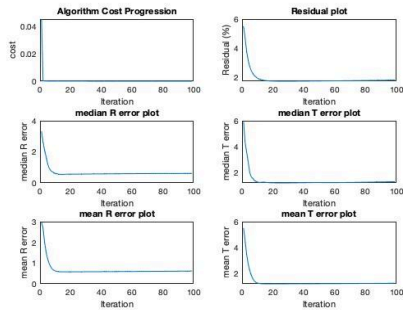
Dataset	Mean loc	Median loc
Madrid Metropolis	3.3544	1.7716
NYC Library	1.6257	0.6639
Alamo	0.5530	0.3269
Yorkminster	1.3930	1.1614
Piazza Del Popolo	1.6312	1.0767

Dataset	Completion Rate	Rel cam diff	Mean loc	me. loc	m. rot	me. rot
Fountain P11	67.9940	0.0013	0.0075	0.0068	0.0860	0.0818
HerzP25	39.9040	0.1483	4.7001	4.6752	2.0143	1.1073
EntryP10	37.0000	0.0047	0.0454	0.0216	0.1480	0.1081
CastleP19	17.16	0.7490	9.6372	5.7962	56.2371	11.7069
HerzP8	63.6719	0.0029	0.0206	0.0234	0.1248	0.1222
CastleP30	18.0444	0.6748	10.9955	11.3299	38.8358	4.5804

**Table 4.** EPFL experiments reran with features from Glue Stick.

Dataset	Method	m. Loc	me. loc	m. rot	me. rot	Dataset	Method	m. Loc	me. loc	m. rot	me. rot
Fount.	LUD	0.9133	0.5436	0.0521	0.0450	Entry	LUD	3.0751	3.0209	0.2514	0.2472
P11	NRFM	0.7497	0.4582	0.0521	0.0450	P10	NRFM	1.3419	1.1124	0.2514	0.2472
	bata+mpls	1.0598	1.1389	0.0581	0.0519		bata+mpls	3.3385	2.6234	0.2680	0.2281
Herz	LUD	7.7520	8.0042	0.1817	0.1851	Herz	LUD	5.0643	5.0671	0.3319	0.3384
P25	NRFM	6.1986	5.8208	0.1817	0.1851	P8	NRFM	4.3740	3.4230	0.3319	0.3384
	bata+mpls	7.5032	7.6311	0.2581	0.2296		bata+mpls	5.0682	5.0976	0.4616	0.4049
Castle	LUD	4.5822	4.0380	0.2399	0.2233	Castle	LUD	4.2667	3.7218	0.1294	0.1301
P19	NRFM	3.3654	3.0196	0.2399	0.2233	P30	NRFM	3.2423	2.7508	0.1294	0.1301
	bata+mpls	4.2259	3.7741	0.2479	0.2192		bata+mpls	4.4926	3.5698	0.1845	0.1604

**Table 5.** EPFL experiments with GC-RANSAC and BATA (initialized with MPLS) with features from Glue Stick, where measurements from very different viewing angles were assumed to not have overlapping features and were deleted from the measurements. m. is mean, and me. is median.



**Figure 1 (Left).** Example for 20% relative noise and 30% Complt. Rate. Algorithm Cost is the cost progression defined in the paper. Residual plot is the relative camera norm difference. R and T are rotation and translation respectively.

**Figure 2 (Right).** Example Camera Pose Visualization for Fountain P11 with our tensor synchronization.