Table 1: Tracking errors ($e_T^{\{x,y,z\}}$ and e_P in mm, $e_R^{\{x,y,z\}}$ in degrees) and Success Rate (SR in %)

soda – noise free

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.2	0.2	1.1	0.3	0.7	0.6	1.5	98.5
dense-only	**0.3**	**0.2**	**0.9**	**0.3**	**0.9**	**0.6**	**1.5**	**100.0**
sparse-only	0.7	0.4	3.1	1.0	1.4	0.6	4.2	61.1
part. filt. 10,000	1.2	0.7	3.9	1.3	2.8	1.3	5.7	75.5
region-based	0.5	1.1	2.2	1.9	7.2	4.8	6.2	84.4
part. filt. 200	1.3	1.0	3.9	1.9	3.1	1.8	6.1	57.5
static	3.1	1.9	3.5	1.6	2.8	1.9	6.8	53.1

soup – noise free

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.2	0.2	0.4	0.1	0.2	0.2	0.7	97.9
dense-only	**0.2**	**0.3**	**0.2**	**0.1**	**0.2**	**0.2**	**0.7**	**99.0**
sparse-only	0.7	0.6	1.7	0.6	0.7	0.4	2.8	93.0
part. filt. 10,000	1.4	1.1	3.4	1.2	1.9	1.0	5.7	76.9
region-based	0.5	1.3	1.8	0.7	1.7	0.6	3.8	96.2
part. filt. 200	1.6	1.3	3.4	1.7	2.5	1.3	6.6	46.7
static	2.8	1.9	3.2	1.4	2.3	1.6	7.3	45.0

soda – noisy

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.9	0.7	2.3	0.8	2.0	1.9	3.8	95.9
dense-only	**0.9**	**0.6**	**2.3**	**0.8**	**2.1**	**1.9**	**3.8**	**97.1**
sparse-only	1.2	0.8	3.1	1.7	2.4	1.2	5.3	36.5
part. filt. 10,000	1.5	0.8	4.4	1.3	2.8	1.2	6.2	65.2
region-based	0.5	1.1	2.2	2.2	6.6	4.9	6.1	84.4
part. filt. 200	1.4	1.0	4.1	1.8	3.3	1.9	6.4	59.6
static	3.1	1.9	3.5	1.6	2.8	1.9	6.8	53.1

soup – noisy

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.3	0.5	0.5	0.3	0.3	0.4	1.3	97.3
dense-only	**0.4**	**0.5**	**0.4**	**0.3**	**0.3**	**0.4**	**1.2**	**98.1**
sparse-only	0.7	0.6	2.0	0.9	1.1	0.5	3.6	74.0
part. filt. 10,000	1.6	1.2	3.3	1.5	2.1	1.0	6.1	65.8
region-based	0.5	1.2	2.0	0.7	1.8	0.6	4.0	95.5
part. filt. 200	1.6	1.4	3.4	1.8	2.6	1.6	6.8	53.9
static	2.8	1.9	3.2	1.4	2.3	1.6	7.3	45.0

soda – occluded

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	**0.7**	**0.5**	**1.8**	**0.9**	**1.6**	**1.1**	**3.0**	**68.3**
dense-only	0.7	0.5	1.6	0.9	1.5	1.3	2.9	67.0
sparse-only	0.8	0.4	3.2	1.1	1.5	0.8	4.3	44.0
part. filt. 10,000	1.7	1.1	3.9	1.2	3.0	1.1	6.0	53.8
region-based	0.7	1.1	2.4	1.9	7.2	5.3	6.3	44.0
part. filt. 200	1.7	1.2	4.2	1.9	3.5	2.1	6.8	45.2
static	3.1	1.9	3.5	1.6	2.8	1.9	6.8	53.1

soup – occluded

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	**0.4**	**0.5**	**1.0**	**0.6**	**0.7**	**0.3**	**1.9**	**78.3**
dense-only	0.5	0.6	0.7	0.5	0.6	0.5	1.9	69.7
sparse-only	0.7	0.6	1.6	0.7	1.0	0.4	2.8	76.5
part. filt. 10,000	1.6	1.3	3.2	1.3	2.3	0.7	5.9	62.5
region-based	0.9	1.2	2.2	1.2	2.2	0.9	4.8	44.0
part. filt. 200	1.6	1.4	3.6	1.7	2.5	1.3	6.7	40.2
static	2.8	1.9	3.2	1.4	2.3	1.6	7.3	45.0

clown – noise free

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.2	0.1	0.5	0.1	0.3	0.2	0.9	100.0
dense-only	**0.1**	**0.1**	**0.3**	**0.1**	**0.3**	**0.1**	**0.7**	**100.0**
sparse-only	0.5	0.4	2.0	0.7	0.8	0.5	3.1	92.0
part. filt. 10,000	1.1	0.9	3.2	1.4	1.9	1.1	5.6	87.5
region-based	0.4	1.2	1.9	0.9	2.2	1.0	4.3	96.4
part. filt. 200	1.3	1.2	3.6	1.8	2.6	1.4	6.7	56.2
static	2.9	1.7	3.2	1.5	2.4	1.7	7.2	47.1

candy – noise free

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.1	0.1	0.3	0.1	0.3	0.1	0.6	99.8
dense-only	**0.1**	**0.1**	**0.2**	**0.1**	**0.2**	**0.1**	**0.4**	**100.0**
sparse-only	0.6	0.4	1.7	0.5	0.8	0.4	2.7	95.4
part. filt. 10,000	1.4	1.0	3.1	1.2	2.1	1.1	5.4	76.7
region-based	0.6	1.3	2.4	1.2	3.4	2.1	5.4	83.6
part. filt. 200	1.6	1.3	3.5	1.6	2.6	1.5	6.6	45.9
static	2.8	2.0	3.2	1.3	2.4	1.7	7.2	46.4

clown – noisy

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.3	0.3	1.0	0.3	0.7	0.3	1.7	98.3
dense-only	**0.3**	**0.2**	**0.7**	**0.3**	**0.7**	**0.4**	**1.4**	**100.0**
sparse-only	0.7	0.7	2.4	1.1	1.3	0.9	4.2	71.1
part. filt. 10,000	1.4	1.1	3.3	1.5	2.4	1.5	6.3	82.4
region-based	0.6	1.3	3.0	1.2	2.1	1.2	5.3	89.4
part. filt. 200	1.4	1.2	3.6	1.8	2.6	1.7	6.8	62.2
static	2.9	1.7	3.2	1.5	2.4	1.7	7.2	47.1

candy – noisy

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
sparse-and-dense	0.2	0.1	0.5	0.1	0.3	0.2	0.8	99.5
dense-only	**0.1**	**0.1**	**0.3**	**0.1**	**0.3**	**0.1**	**0.6**	**100.0**
sparse-only	0.7	0.7	1.8	0.7	0.9	0.5	3.2	90.4
part. filt. 10,000	1.4	1.2	3.0	1.3	2.2	1.0	5.6	76.4
region-based	0.7	1.4	2.6	1.2	3.7	2.2	5.8	83.9
part. filt. 200	1.7	1.4	3.6	1.6	2.6	1.6	6.6	48.8
static	2.8	2.0	3.2	1.3	2.4	1.7	7.2	46.4

Table 1: continued

	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR	e_T^x	e_T^y	e_T^z	e_R^x	e_R^y	e_R^z	e_P	SR
	clown – occluded								candy – occluded							
sparse-and-dense	**0.5**	**0.6**	**1.3**	**0.7**	**0.7**	**0.5**	**2.4**	**77.7**	**0.5**	**0.4**	**1.0**	**0.5**	**0.7**	**0.4**	**1.9**	**79.5**
dense-only	0.8	0.6	0.9	0.7	0.8	0.8	2.3	68.5	0.4	0.5	0.6	0.5	0.6	0.4	1.6	72.9
sparse-only	0.4	0.4	1.9	0.7	0.8	0.4	2.9	74.1	0.6	0.5	1.7	0.5	0.9	0.4	2.8	80.0
part. filt. 10,000	1.3	1.0	3.5	1.3	2.3	1.2	6.2	76.4	1.5	1.3	3.2	1.2	2.2	1.0	5.7	63.9
region-based	0.8	1.2	2.3	1.0	1.9	0.8	4.5	43.8	0.9	1.3	2.3	1.5	3.2	1.9	5.5	39.2
part. filt. 200	1.4	1.4	3.4	2.0	2.4	1.6	6.7	48.1	1.7	1.5	3.1	1.7	2.7	1.9	6.7	40.9
static	2.9	1.7	3.2	1.5	2.4	1.7	7.2	47.1	2.8	2.0	3.2	1.3	2.4	1.7	7.2	46.4
	cube – noise free								edge – noise free							
sparse-and-dense	0.1	0.1	0.4	0.1	0.2	0.1	0.6	100.0	**1.3**	**0.8**	**1.2**	**1.3**	**1.8**	**1.6**	**4.2**	**96.2**
dense-only	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.3**	**100.0**	1.3	0.8	1.2	1.3	1.8	1.6	4.2	96.2
sparse-only	0.5	0.4	1.7	0.6	0.7	0.4	2.7	97.6	–	–	–	–	–	–	–	0.0
part. filt. 10,000	1.1	0.9	3.0	1.3	1.7	1.0	5.2	93.2	1.3	0.9	3.1	1.1	1.7	1.0	5.2	72.4
region-based	0.7	1.2	2.8	1.7	1.6	0.9	5.1	83.9	0.7	1.1	2.3	1.7	1.5	0.8	4.6	84.6
part. filt. 200	1.5	1.1	3.7	1.9	2.2	1.5	6.8	53.1	1.6	1.2	3.5	1.7	2.1	1.6	6.5	63.2
static	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2
	cube – noisy								edge – noisy							
sparse-and-dense	0.1	0.1	0.2	0.2	0.3	0.1	0.6	100.0	**1.2**	**0.9**	**1.4**	**1.4**	**2.1**	**1.6**	**4.5**	**97.4**
dense-only	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.4**	**100.0**	1.2	0.9	1.4	1.4	2.1	1.6	4.5	97.4
sparse-only	0.5	0.4	1.8	0.7	0.7	0.4	2.8	95.9	–	–	–	–	–	–	–	0.0
part. filt. 10,000	1.3	0.9	2.8	1.2	1.9	1.1	5.2	93.7	1.4	1.0	3.2	1.3	1.8	0.9	5.5	91.3
region-based	0.7	1.2	3.2	1.6	1.9	1.2	5.6	74.3	0.6	1.1	2.5	1.8	1.7	1.0	4.9	83.7
part. filt. 200	1.5	1.2	3.6	2.0	2.1	1.4	6.7	53.6	1.7	1.2	3.8	1.8	2.1	1.4	6.8	62.5
static	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2
	cube – occluded								edge – occluded							
sparse-and-dense	0.5	0.5	1.3	0.7	0.8	0.5	2.4	75.7	1.6	1.3	1.8	1.6	2.0	2.0	5.2	56.2
dense-only	0.5	0.5	0.9	0.6	0.8	0.5	2.0	69.9	1.6	1.3	1.8	1.6	2.0	2.0	5.2	56.2
sparse-only	**0.6**	**0.5**	**1.9**	**0.8**	**0.8**	**0.4**	**2.9**	**78.8**	–	–	–	–	–	–	–	0.0
part. filt. 10,000	1.3	1.2	3.0	1.5	1.8	1.2	5.7	76.2	**1.5**	**1.1**	**3.1**	**1.5**	**1.9**	**1.0**	**5.7**	**68.2**
region-based	0.9	1.2	2.9	1.5	1.9	1.0	5.3	37.8	0.8	1.2	2.4	1.4	1.7	0.9	4.6	38.9
part. filt. 200	1.5	1.4	3.4	2.1	2.2	1.5	6.7	38.9	1.8	1.2	3.6	1.8	2.3	1.4	6.6	49.7
static	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2	3.0	2.0	3.2	1.6	2.5	1.7	7.2	50.2

Supplemental Material to K. Pauwels, L. Rubio, and E. Ros,
Real-time Pose Detection and Tracking of Hundreds of Objects,
IEEE Transactions on Circuits and Systems for Video Technology