# 1 EPE, RMSE and AAE tables

## 1.1 Dataset 1

Table 1: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 10$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0122 | 0.0119 | 0.0087 | 0.0136 | 0.0129 | 0.0133 | 0.0138 | 0.0135 |
| t10_20 | 0.0134 | 0.0150 | 0.0138 | 0.0094 | 0.0145 | 0.0143 | 0.0147 | 0.0142 |
| t20_30 | 0.0179 | 0.0169 | 0.0235 | 0.0151 | 0.0175 | 0.0170 | 0.0175 | 0.0175 |
| t30_40 | 0.0224 | 0.0232 | 0.0146 | 0.0187 | 0.0188 | 0.0180 | 0.0190 | 0.0178 |
| t40_50 | 0.0284 | 0.0359 | 0.0358 | 0.0234 | 0.0196 | 0.0209 | 0.0205 | 0.0200 |
| t50_60 | 0.0473 | 0.0426 | 0.0514 | 0.0310 | 0.0641 | 0.0578 | 0.0594 | 0.0626 |
| t60_70 | 0.0636 | 0.0742 | 0.0903 | 0.0926 | 0.0582 | 0.0622 | 0.0925 | 0.0914 |
| t70_80 | **0.2839** | **0.2428** | **0.3258** | **0.2774** | **0.2376** | **0.2432** | **0.2814** | **0.2469** |
| t80_90 | 0.0946 | 0.0999 | 0.0907 | 0.1126 | 0.0973 | 0.1103 | 0.1178 | 0.1077 |
| t90_100 | 0.0658 | 0.0801 | 0.0650 | 0.0789 | 0.0706 | 0.0702 | 0.0567 | 0.0622 |
| t100_110 | 0.0448 | 0.0310 | 0.0393 | 0.0342 | 0.0351 | 0.0335 | 0.0348 | 0.0335 |
| t110_120 | 0.0478 | 0.0455 | 0.0377 | 0.0414 | 0.0417 | 0.0469 | 0.0570 | 0.0627 |
| t120_130 | 0.0458 | 0.0465 | 0.0417 | 0.0482 | 0.0446 | 0.0565 | 0.0560 | 0.0636 |
| t130_140 | 0.0507 | 0.0569 | 0.0511 | 0.0525 | 0.0634 | 0.0640 | 0.0604 | 0.0507 |
| t140_150 | 0.0518 | 0.0578 | 0.0583 | 0.0481 | 0.0604 | 0.0561 | 0.0597 | 0.0524 |
| Avg | 0.0594 | 0.0587 | 0.0632 | 0.0598 | 0.0571 | 0.0589 | 0.0641 | 0.0611 |

Table 2: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 10$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0154 | 0.0148 | 0.0102 | 0.0156 | 0.0137 | 0.0141 | 0.0144 | 0.0141 |
| t10_20 | 0.0172 | 0.0164 | 0.0174 | 0.0105 | 0.0155 | 0.0153 | 0.0154 | 0.0151 |
| t20_30 | 0.0198 | 0.0190 | 0.0268 | 0.0181 | 0.0186 | 0.0182 | 0.0183 | 0.0183 |
| t30_40 | 0.0249 | 0.0272 | 0.0162 | 0.0210 | 0.0200 | 0.0191 | 0.0199 | 0.0187 |
| t40_50 | 0.0460 | 0.0645 | 0.0518 | 0.0292 | 0.0205 | 0.0220 | 0.0216 | 0.0209 |
| t50_60 | 0.0544 | 0.0475 | 0.0820 | 0.0327 | 0.0745 | 0.0706 | 0.0743 | 0.0752 |
| t60_70 | 0.0691 | 0.0797 | 0.0944 | 0.0964 | 0.0666 | 0.0697 | 0.098 | 0.0973 |
| t70_80 | **0.2907** | **0.2471** | **0.3283** | **0.2819** | **0.2412** | **0.2462** | **0.2845** | **0.2630** |
| t80_90 | 0.1201 | 0.1102 | 0.0980 | 0.1231 | 0.1038 | 0.1159 | 0.1209 | 0.1151 |
| t90_100 | 0.0704 | 0.0885 | 0.0709 | 0.0863 | 0.0741 | 0.0731 | 0.0619 | 0.0659 |
| t100_110 | 0.0509 | 0.0347 | 0.0419 | 0.0383 | 0.0384 | 0.0387 | 0.0383 | 0.0355 |
| t110_120 | 0.0522 | 0.0551 | 0.0425 | 0.0460 | 0.0469 | 0.0545 | 0.0622 | 0.0714 |
| t120_130 | 0.0506 | 0.0522 | 0.0459 | 0.0524 | 0.0483 | 0.0672 | 0.0625 | 0.0718 |
| t130_140 | 0.0584 | 0.0657 | 0.0565 | 0.0603 | 0.0721 | 0.0748 | 0.0686 | 0.0563 |
| t140_150 | 0.0576 | 0.0697 | 0.0695 | 0.0526 | 0.0687 | 0.0643 | 0.0655 | 0.0594 |
| Avg | 0.0665 | 0.0662 | 0.0702 | 0.0643 | 0.0615 | 0.0642 | 0.0684 | 0.0665 |

Table 3: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 10$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.6966 | 0.6818 | 0.4964 | 0.7777 | 0.7406 | 0.7622 | 0.7912 | 0.7743 |
| t10_20 | 0.7625 | 0.8506 | 0.7842 | 0.5338 | 0.8230 | 0.8114 | 0.8369 | 0.8037 |
| t20_30 | 1.0007 | 0.9418 | 1.3080 | 0.8408 | 0.9756 | 0.9507 | 0.974 | 0.9762 |
| t30_40 | 1.2252 | 1.2668 | 0.8011 | 1.0188 | 1.0209 | 0.9804 | 1.035 | 0.9689 |
| t40_50 | 1.5205 | 1.9382 | 1.8967 | 1.2312 | 1.0322 | 1.1001 | 1.0813 | 1.0524 |
| t50_60 | 2.4119 | 2.1348 | 2.6811 | 1.5760 | 3.3350 | 3.0084 | 3.089 | 3.2524 |
| t60_70 | 3.6327 | 4.2408 | 5.1554 | 5.2879 | 3.3247 | 3.5561 | 5.2829 | 5.2156 |
| t70_80 | **15.5293** | **13.1816** | **17.9625** | **15.1875** | **12.9224** | **13.2101** | **15.4417** | **13.4083** |
| t80_90 | 5.1325 | 5.4396 | 4.9753 | 6.1661 | 5.3201 | 6.0244 | 6.4221 | 5.8411 |
| t90_100 | 3.6680 | 4.4745 | 3.6355 | 4.3813 | 3.9307 | 3.9204 | 3.1732 | 3.4444 |
| t100_110 | 2.5578 | 1.7688 | 2.2451 | 1.9539 | 2.0003 | 1.9063 | 1.9828 | 1.9083 |
| t110_120 | 2.7351 | 2.6012 | 2.1561 | 2.3675 | 2.3856 | 2.6810 | 3.2564 | 3.5849 |
| t120_130 | 2.6174 | 2.6553 | 2.3893 | 2.7573 | 2.5541 | 3.2309 | 3.2041 | 3.6394 |
| t130_140 | 2.8714 | 3.2073 | 2.8830 | 2.9631 | 3.5938 | 3.6298 | 3.4158 | 2.8691 |
| t140_150 | 2.8997 | 3.2235 | 3.2701 | 2.7058 | 3.3878 | 3.1535 | 3.3769 | 2.956 |
| Avg | 3.2841 | 3.2404 | 3.5093 | 3.3166 | 3.1565 | 3.2617 | 3.5576 | 3.3797 |

Table 4: Number of points used to estimate 3D flow for dataset 1

| Number of flow vectors | | | | |
|---|---|---|---|---|
| Seq. | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 64 | 61 | 61 | 64 |
| t10_20 | 52 | 55 | 65 | 61 |
| t20_30 | 42 | 53 | 52 | 51 |
| t30_40 | 33 | 38 | 42 | 49 |
| t40_50 | 34 | 35 | 34 | 39 |
| t50_60 | 28 | 23 | 31 | 30 |
| t60_70 | 15 | 17 | 19 | 20 |
| t70_80 | 11 | 12 | 10 | 11 |
| t80_90 | 23 | 27 | 24 | 22 |
| t90_100 | 37 | 25 | 28 | 28 |
| t100_110 | 31 | 35 | 31 | 29 |
| t110_120 | 46 | 47 | 39 | 42 |
| t120_130 | 47 | 46 | 52 | 49 |
| t130_140 | 39 | 45 | 46 | 40 |
| t140_150 | 49 | 41 | 54 | 50 |

Table 5: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 4$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.0069 | 0.0119 | 0.0071 | 0.0072 | 0.0123 | 0.0120 | 0.0114 | 0.0133 |
| t4_8 | 0.0094 | 0.0131 | 0.0058 | 0.0093 | 0.0130 | 0.0121 | 0.0117 | 0.0123 |
| t8_12 | 0.0120 | 0.0176 | 0.0117 | 0.0086 | 0.0126 | 0.0122 | 0.0127 | 0.0131 |
| t12_16 | 0.0154 | 0.0223 | 0.0117 | 0.0102 | 0.0124 | 0.0126 | 0.0126 | 0.0126 |
| t16_20 | 0.0134 | 0.0148 | 0.0109 | 0.0099 | 0.0128 | 0.0130 | 0.0126 | 0.0136 |
| t20_24 | 0.0092 | 0.0133 | 0.0117 | 0.0065 | 0.0137 | 0.0130 | 0.0135 | 0.0137 |
| t24_28 | 0.0150 | 0.0151 | 0.0119 | 0.0136 | 0.0132 | 0.0119 | 0.0136 | 0.0138 |
| t28_32 | 0.0189 | 0.0266 | 0.0145 | 0.0112 | 0.0142 | 0.0132 | 0.0121 | 0.0138 |
| t32_36 | 0.0223 | 0.0259 | 0.0296 | 0.0164 | 0.0152 | 0.0144 | 0.0139 | 0.0133 |
| t36_40 | 0.0263 | 0.0274 | 0.0235 | 0.0159 | 0.0147 | 0.0139 | 0.0140 | 0.0137 |
| t40_44 | 0.0229 | 0.0294 | 0.0290 | 0.0165 | 0.0148 | 0.0152 | 0.0149 | 0.0153 |
| t44_48 | 0.0281 | 0.0300 | 0.0294 | 0.0168 | 0.0146 | 0.0158 | 0.0154 | 0.0156 |
| t48_52 | 0.0196 | 0.0291 | 0.0263 | 0.0158 | 0.0159 | 0.0166 | 0.0134 | 0.0163 |
| t52_56 | 0.0297 | 0.0314 | 0.0208 | 0.0213 | 0.0224 | 0.0232 | 0.0241 | 0.0212 |
| t56_60 | 0.0358 | 0.0365 | 0.0311 | 0.0319 | 0.0512 | 0.0490 | 0.0533 | 0.0527 |
| t60_64 | 0.0500 | 0.0525 | 0.0528 | 0.0571 | 0.0559 | 0.0662 | 0.0756 | 0.0799 |
| t64_68 | 0.0499 | 0.0507 | 0.0580 | 0.0594 | 0.0486 | 0.0481 | 0.0509 | 0.0566 |
| t68_72 | 0.0911 | 0.0760 | 0.0795 | 0.0931 | 0.0969 | 0.0880 | 0.0832 | 0.1003 |
| t72_76 | **0.1587** | **0.1597** | **0.1745** | **0.1291** | **0.1078** | **0.1146** | **0.1220** | **0.1198** |
| t76_80 | 0.0943 | 0.0991 | 0.1329 | 0.0734 | 0.0571 | 0.0626 | 0.0547 | 0.0539 |
| t80_84 | 0.0512 | 0.0587 | 0.0353 | 0.0443 | 0.0592 | 0.0633 | 0.0799 | 0.0598 |
| t84_88 | 0.0427 | 0.0355 | 0.0363 | 0.0385 | 0.0542 | 0.0490 | 0.0679 | 0.0615 |
| t88_92 | 0.0220 | 0.0353 | 0.0228 | 0.0358 | 0.0179 | 0.0295 | 0.0348 | 0.0286 |
| t92_96 | 0.0318 | 0.0332 | 0.0422 | 0.0622 | 0.0263 | 0.0293 | 0.0217 | 0.0270 |
| t96_100 | 0.0377 | 0.0557 | 0.0677 | 0.0463 | 0.0425 | 0.0307 | 0.0326 | 0.0350 |
| t100_104 | 0.0393 | 0.0388 | 0.0448 | 0.0311 | 0.0327 | 0.0311 | 0.0395 | 0.0374 |
| t104_108 | 0.0286 | 0.0309 | 0.0238 | 0.0317 | 0.0320 | 0.0276 | 0.0303 | 0.0295 |
| t108_112 | 0.0416 | 0.0384 | 0.0343 | 0.0380 | 0.0503 | 0.0422 | 0.0460 | 0.0558 |
| t112_116 | 0.0379 | 0.0325 | 0.0435 | 0.0349 | 0.0390 | 0.0455 | 0.0507 | 0.0459 |
| t116_120 | 0.0519 | 0.0518 | 0.0466 | 0.0430 | 0.0457 | 0.0364 | 0.0403 | 0.0444 |
| t120_124 | 0.0585 | 0.0580 | 0.0634 | 0.0515 | 0.0479 | 0.0633 | 0.0591 | 0.0637 |
| t124_128 | 0.0208 | 0.0210 | 0.0211 | 0.0226 | 0.0257 | 0.0270 | 0.0370 | 0.0352 |
| t128_132 | 0.0376 | 0.0426 | 0.0421 | 0.0412 | 0.0455 | 0.0537 | 0.0652 | 0.0549 |
| t132_126 | 0.0434 | 0.0272 | 0.0212 | 0.0283 | 0.0377 | 0.0360 | 0.0319 | 0.0348 |
| t136_140 | 0.0312 | 0.0383 | 0.0311 | 0.0290 | 0.0273 | 0.0268 | 0.0212 | 0.0220 |
| t140_144 | 0.0245 | 0.0464 | 0.0312 | 0.0276 | 0.0280 | 0.0322 | 0.0281 | 0.0282 |
| t144_148 | 0.0426 | 0.0350 | 0.0305 | 0.0274 | 0.0328 | 0.0288 | 0.0373 | 0.0328 |
| Avg | 0.0371 | 0.0395 | 0.0381 | 0.0340 | 0.0342 | 0.0346 | 0.0367 | 0.0368 |

Table 6: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 4$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.0079 | 0.0152 | 0.0103 | 0.0089 | 0.0129 | 0.0126 | 0.0119 | 0.0138 |
| t4_8 | 0.0103 | 0.0155 | 0.0071 | 0.0108 | 0.0137 | 0.0128 | 0.0122 | 0.0128 |
| t8_12 | 0.0131 | 0.0206 | 0.0142 | 0.0101 | 0.0132 | 0.0129 | 0.0132 | 0.0136 |
| t12_16 | 0.0178 | 0.0243 | 0.0154 | 0.0117 | 0.0131 | 0.0133 | 0.0132 | 0.0130 |
| t16_20 | 0.0165 | 0.0181 | 0.0133 | 0.0115 | 0.0136 | 0.0138 | 0.0131 | 0.0141 |
| t20_24 | 0.0123 | 0.0145 | 0.0148 | 0.0077 | 0.0143 | 0.0137 | 0.0140 | 0.0142 |
| t24_28 | 0.0166 | 0.0186 | 0.0144 | 0.0159 | 0.0138 | 0.0126 | 0.0141 | 0.0144 |
| t28_32 | 0.0214 | 0.0299 | 0.0193 | 0.0128 | 0.0148 | 0.0139 | 0.0127 | 0.0144 |
| t32_36 | 0.0238 | 0.0297 | 0.0338 | 0.0185 | 0.0158 | 0.0150 | 0.0146 | 0.0140 |
| t36_40 | 0.0286 | 0.0324 | 0.0263 | 0.0174 | 0.0153 | 0.0145 | 0.0147 | 0.0143 |
| t40_44 | 0.0268 | 0.0355 | 0.0342 | 0.0187 | 0.0154 | 0.0158 | 0.0155 | 0.0159 |
| t44_48 | 0.0316 | 0.0337 | 0.0357 | 0.0209 | 0.0152 | 0.0164 | 0.0162 | 0.0162 |
| t48_52 | 0.0238 | 0.0321 | 0.0331 | 0.0175 | 0.0167 | 0.0170 | 0.0142 | 0.0167 |
| t52_56 | 0.0319 | 0.0353 | 0.0268 | 0.0229 | 0.0249 | 0.0257 | 0.0264 | 0.0235 |
| t56_60 | 0.0404 | 0.0408 | 0.0363 | 0.0352 | 0.0595 | 0.0601 | 0.0602 | 0.0607 |
| t60_64 | 0.0543 | 0.0569 | 0.0564 | 0.0619 | 0.0610 | 0.0717 | 0.0793 | 0.0830 |
| t64_68 | 0.0540 | 0.0551 | 0.0626 | 0.0639 | 0.0525 | 0.0533 | 0.0553 | 0.0607 |
| t68_72 | 0.1023 | 0.0811 | 0.0830 | 0.1048 | 0.1015 | 0.0912 | 0.0853 | 0.1030 |
| t72_76 | **0.1604** | **0.1661** | **0.1782** | **0.1361** | **0.1113** | **0.1179** | **0.1232** | **0.1230** |
| t76_80 | 0.0991 | 0.1032 | 0.1412 | 0.0768 | 0.0636 | 0.0692 | 0.0609 | 0.0590 |
| t80_84 | 0.0574 | 0.0645 | 0.0400 | 0.0497 | 0.0646 | 0.0699 | 0.0835 | 0.0622 |
| t84_88 | 0.0455 | 0.0391 | 0.0398 | 0.0399 | 0.0628 | 0.0561 | 0.0852 | 0.0718 |
| t88_92 | 0.0267 | 0.0405 | 0.0261 | 0.0383 | 0.0190 | 0.0317 | 0.0370 | 0.0304 |
| t92_96 | 0.0351 | 0.0339 | 0.0465 | 0.0675 | 0.0280 | 0.0305 | 0.0239 | 0.0301 |
| t96_100 | 0.0451 | 0.0590 | 0.0746 | 0.0514 | 0.0451 | 0.0335 | 0.0364 | 0.0397 |
| t100_104 | 0.0437 | 0.0439 | 0.0505 | 0.0353 | 0.0353 | 0.0348 | 0.0433 | 0.0407 |
| t104_108 | 0.0312 | 0.0360 | 0.0268 | 0.0354 | 0.0378 | 0.0310 | 0.0341 | 0.0322 |
| t108_112 | 0.0463 | 0.0420 | 0.0372 | 0.0408 | 0.0565 | 0.0474 | 0.0509 | 0.0632 |
| t112_116 | 0.0403 | 0.0374 | 0.0475 | 0.0395 | 0.0460 | 0.0507 | 0.0554 | 0.0509 |
| t116_120 | 0.0588 | 0.0544 | 0.0524 | 0.0468 | 0.0473 | 0.0376 | 0.0441 | 0.0473 |
| t120_124 | 0.0619 | 0.0663 | 0.0729 | 0.0588 | 0.0517 | 0.0744 | 0.0682 | 0.0711 |
| t124_128 | 0.0240 | 0.0239 | 0.0225 | 0.0251 | 0.0271 | 0.0283 | 0.0383 | 0.0368 |
| t128_132 | 0.0406 | 0.0485 | 0.0454 | 0.0470 | 0.0513 | 0.0595 | 0.0695 | 0.0585 |
| t132_126 | 0.0500 | 0.0318 | 0.0258 | 0.0316 | 0.0442 | 0.0418 | 0.0366 | 0.0391 |
| t136_140 | 0.0360 | 0.0426 | 0.0324 | 0.0302 | 0.0283 | 0.0281 | 0.0227 | 0.0237 |
| t140_144 | 0.0294 | 0.0526 | 0.0358 | 0.0306 | 0.0309 | 0.0359 | 0.0309 | 0.0303 |
| t144_148 | 0.0478 | 0.0398 | 0.0344 | 0.0305 | 0.0363 | 0.0315 | 0.0409 | 0.0370 |
| Avg | 0.0409 | 0.0436 | 0.0424 | 0.0374 | 0.0371 | 0.0377 | 0.0398 | 0.0396 |

Table 7: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 1 with $\Delta = 4$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.3927 | 0.6814 | 0.4079 | 0.4148 | 0.7032 | 0.6864 | 0.6533 | 0.7631 |
| t4_8 | 0.5380 | 0.7487 | 0.3310 | 0.5332 | 0.7449 | 0.6925 | 0.6718 | 0.7032 |
| t8_12 | 0.6884 | 1.0062 | 0.6708 | 0.4947 | 0.7236 | 0.6982 | 0.7259 | 0.7482 |
| t12_16 | 0.8784 | 1.2727 | 0.6668 | 0.5829 | 0.7083 | 0.7184 | 0.7223 | 0.7188 |
| t16_20 | 0.7684 | 0.8435 | 0.6216 | 0.5680 | 0.7324 | 0.7413 | 0.7187 | 0.7776 |
| t20_24 | 0.5267 | 0.7603 | 0.6663 | 0.3728 | 0.7800 | 0.7402 | 0.7739 | 0.7801 |
| t24_28 | 0.8575 | 0.8592 | 0.6801 | 0.7742 | 0.7513 | 0.6796 | 0.7746 | 0.7856 |
| t28_32 | 1.0730 | 1.5115 | 0.8222 | 0.6360 | 0.8112 | 0.7539 | 0.6912 | 0.7885 |
| t32_36 | 1.2682 | 1.4706 | 1.6795 | 0.9313 | 0.8634 | 0.8221 | 0.7937 | 0.7590 |
| t36_40 | 1.4882 | 1.5519 | 1.3341 | 0.9032 | 0.8355 | 0.7875 | 0.7965 | 0.7781 |
| t40_44 | 1.2985 | 1.6603 | 1.6396 | 0.9366 | 0.8373 | 0.8612 | 0.8427 | 0.8675 |
| t44_48 | 1.5840 | 1.6912 | 1.6606 | 0.9505 | 0.8259 | 0.8957 | 0.8700 | 0.8818 |
| t48_52 | 1.1032 | 1.6386 | 1.4726 | 0.8899 | 0.8981 | 0.9356 | 0.7532 | 0.9166 |
| t52_56 | 1.6672 | 1.7571 | 1.1665 | 1.1928 | 1.2612 | 1.3051 | 1.3576 | 1.1923 |
| t56_60 | 2.0089 | 2.0379 | 1.7445 | 1.7848 | 2.8926 | 2.7663 | 3.0116 | 2.9754 |
| t60_64 | 2.8485 | 2.9848 | 3.0044 | 3.2542 | 3.1856 | 3.7688 | 4.3029 | 4.5494 |
| t64_68 | 2.8544 | 2.9050 | 3.3186 | 3.3976 | 2.7825 | 2.7530 | 2.9117 | 3.2423 |
| t68_72 | 5.1860 | 4.3236 | 4.5134 | 5.2975 | 5.5090 | 5.0009 | 4.7207 | 5.7036 |
| t72_76 | **9.0216** | **9.0747** | **9.9135** | **7.3277** | **6.1110** | **6.4937** | **6.9148** | **6.7892** |
| t76_80 | 5.3582 | 5.6252 | 7.5653 | 4.1661 | 3.2349 | 3.5481 | 3.1053 | 3.0548 |
| t80_84 | 2.9072 | 3.3318 | 2.0115 | 2.5205 | 3.3503 | 3.5930 | 4.5132 | 3.3778 |
| t84_88 | 2.4299 | 2.0253 | 2.0687 | 2.1955 | 3.0700 | 2.7870 | 3.8359 | 3.4850 |
| t88_92 | 1.2586 | 2.0195 | 1.3040 | 2.0453 | 1.0237 | 1.6845 | 1.9864 | 1.6338 |
| t92_96 | 1.8105 | 1.8942 | 2.4104 | 3.5494 | 1.4993 | 1.6705 | 1.2378 | 1.5398 |
| t96_100 | 2.1497 | 3.1819 | 3.8677 | 2.6404 | 2.4258 | 1.7539 | 1.8586 | 1.9935 |
| t100_104 | 2.2491 | 2.2189 | 2.5650 | 1.7775 | 1.8687 | 1.7772 | 2.2540 | 2.1402 |
| t104_108 | 1.6397 | 1.7703 | 1.3654 | 1.8162 | 1.8291 | 1.5809 | 1.7358 | 1.6902 |
| t108_112 | 2.3794 | 2.2006 | 1.9636 | 2.1729 | 2.8784 | 2.4145 | 2.6319 | 3.1926 |
| t112_116 | 2.1707 | 1.8588 | 2.4916 | 1.9957 | 2.2351 | 2.6039 | 2.9052 | 2.6263 |
| t116_120 | 2.9712 | 2.9682 | 2.6698 | 2.4618 | 2.6168 | 2.0822 | 2.3079 | 2.5420 |
| t120_124 | 3.3435 | 3.3141 | 3.6253 | 2.9485 | 2.7403 | 3.6203 | 3.3774 | 3.6467 |
| t124_128 | 1.1885 | 1.2049 | 1.2060 | 1.2972 | 1.4724 | 1.5451 | 2.1169 | 2.0142 |
| t128_132 | 2.1519 | 2.4353 | 2.4040 | 2.3555 | 2.6054 | 3.0701 | 3.7295 | 3.1427 |
| t132_126 | 2.4798 | 1.5551 | 1.2096 | 1.6175 | 2.1547 | 2.0602 | 1.8238 | 1.9922 |
| t136_140 | 1.7822 | 2.1872 | 1.7730 | 1.6558 | 1.5616 | 1.5305 | 1.2142 | 1.2597 |
| t140_144 | 1.4014 | 2.6439 | 1.7837 | 1.5752 | 1.6004 | 1.8393 | 1.6093 | 1.6138 |
| t144_148 | 2.4260 | 1.9948 | 1.7409 | 1.5635 | 1.8740 | 1.6433 | 2.1332 | 1.8767 |
| Avg | 2.4260 | 1.9948 | 1.7409 | 1.5635 | 1.8740 | 1.6433 | 2.1332 | 1.8767 |

Table 8: Number of flow vectors for dataset 1 with $\Delta = 4$

| Number of flow vectors | | | | |
|---|---|---|---|---|
| Seq. | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 64 | 61 | 61 | 64 |
| t4_8 | 64 | 62 | 71 | 63 |
| t8_12 | 58 | 57 | 63 | 66 |
| t12_16 | 50 | 58 | 60 | 57 |
| t16_20 | 50 | 55 | 55 | 44 |
| t20_24 | 42 | 53 | 52 | 51 |
| t24_28 | 38 | 42 | 45 | 43 |
| t28_32 | 34 | 46 | 43 | 49 |
| t32_36 | 31 | 40 | 42 | 47 |
| t36_40 | 34 | 35 | 40 | 40 |
| t40_44 | 34 | 35 | 34 | 39 |
| t44_48 | 29 | 30 | 33 | 33 |
| t48_52 | 27 | 24 | 28 | 32 |
| t52_56 | 23 | 20 | 21 | 24 |
| t56_60 | 21 | 23 | 22 | 23 |
| t60_64 | 15 | 17 | 19 | 20 |
| t64_68 | 29 | 33 | 31 | 28 |
| t68_72 | 21 | 20 | 14 | 16 |
| t72_76 | 21 | 19 | 17 | 21 |
| t76_80 | 25 | 27 | 33 | 32 |
| t80_84 | 23 | 27 | 24 | 22 |
| t84_88 | 16 | 22 | 24 | 18 |
| t88_92 | 35 | 29 | 28 | 35 |
| t92_96 | 33 | 23 | 33 | 27 |
| t96_100 | 23 | 26 | 31 | 28 |
| t100_104 | 31 | 35 | 31 | 29 |
| t104_108 | 40 | 41 | 38 | 40 |
| t108_112 | 46 | 52 | 46 | 38 |
| t112_116 | 44 | 43 | 44 | 48 |
| t116_120 | 52 | 46 | 59 | 56 |
| t120_124 | 47 | 46 | 52 | 49 |
| t124_128 | 52 | 52 | 46 | 54 |
| t128_132 | 54 | 54 | 45 | 55 |
| t132_126 | 36 | 43 | 39 | 39 |
| t136_140 | 41 | 40 | 47 | 32 |
| t140_144 | 49 | 41 | 54 | 50 |
| t144_148 | 49 | 51 | 60 | 52 |

### 1.2 Dataset 2

Table 9: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 10$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0179 | 0.0207 | 0.0170 | 0.0180 | 0.0798 | 0.0968 | 0.0763 | 0.0899 |
| t10_20 | 0.0918 | 0.0987 | 0.0903 | 0.0744 | 0.1280 | 0.1398 | 0.1398 | 0.1444 |
| t20_30 | **0.2465** | **0.2025** | **0.2640** | **0.2160** | **0.2440** | **0.2362** | **0.2674** | **0.1970** |
| t30_40 | 0.1625 | 0.1622 | 0.1570 | 0.1565 | 0.1624 | 0.2112 | 0.1671 | 0.1835 |
| t40_50 | 0.1127 | 0.1255 | 0.0950 | 0.1194 | 0.1562 | 0.1767 | 0.1428 | 0.1337 |
| t50_60 | 0.0630 | 0.0575 | 0.0605 | 0.0746 | 0.0728 | 0.1246 | 0.1040 | 0.0851 |
| t60_70 | 0.0838 | 0.0663 | 0.0612 | 0.0775 | 0.0916 | 0.1419 | 0.1170 | 0.1046 |
| t70_80 | 0.1177 | 0.0819 | 0.0959 | 0.1029 | 0.1145 | 0.1082 | 0.2203 | 0.1220 |
| t80_90 | 0.0714 | 0.0785 | 0.0634 | 0.0793 | 0.0643 | 0.1294 | 0.1220 | 0.0747 |
| t90_100 | 0.1310 | 0.1265 | 0.1124 | 0.1259 | 0.1086 | 0.1211 | 0.2113 | 0.1071 |
| t100_110 | 0.1436 | 0.1126 | 0.1080 | 0.1121 | 0.0889 | 0.1340 | 0.1121 | 0.1034 |
| t110_120 | 0.0795 | 0.0920 | 0.0854 | 0.0853 | 0.0817 | 0.0969 | 0.1156 | 0.0955 |
| t120_130 | 0.0949 | 0.0933 | 0.1204 | 0.0994 | 0.0874 | 0.1000 | 0.1420 | 0.1047 |
| t130_140 | 0.0631 | 0.0722 | 0.0968 | 0.0761 | 0.0702 | 0.0720 | 0.0932 | 0.0833 |
| t140_150 | 0.0478 | 0.0512 | 0.0474 | 0.0443 | 0.0477 | 0.0479 | 0.0454 | 0.0550 |
| Avg | 0.1018 | 0.0961 | 0.0983 | 0.0974 | 0.1065 | 0.1291 | 0.1384 | 0.1123 |

Table 10: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 10$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0229 | 0.0280 | 0.0258 | 0.0251 | 0.0939 | 0.1119 | 0.0876 | 0.1016 |
| t10_20 | 0.1123 | 0.1199 | 0.1071 | 0.1139 | 0.1339 | 0.1623 | 0.1492 | 0.1676 |
| t20_30 | **0.2751** | **0.2288** | **0.2958** | **0.2433** | **0.2653** | **0.2640** | **0.2913** | **0.2416** |
| t30_40 | 0.1794 | 0.1812 | 0.1765 | 0.1738 | 0.1827 | 0.2237 | 0.1843 | 0.1984 |
| t40_50 | 0.1245 | 0.1470 | 0.1150 | 0.1364 | 0.1646 | 0.1982 | 0.1578 | 0.1439 |
| t50_60 | 0.0710 | 0.0674 | 0.0675 | 0.0806 | 0.0782 | 0.1313 | 0.1233 | 0.0923 |
| t60_70 | 0.0933 | 0.0781 | 0.0702 | 0.0875 | 0.0971 | 0.1630 | 0.1228 | 0.1099 |
| t70_80 | 0.1305 | 0.1066 | 0.1113 | 0.1187 | 0.1255 | 0.1505 | 0.2550 | 0.1386 |
| t80_90 | 0.0847 | 0.0860 | 0.0719 | 0.0953 | 0.0730 | 0.1424 | 0.1731 | 0.0870 |
| t90_100 | 0.1471 | 0.1439 | 0.1312 | 0.1406 | 0.1204 | 0.1344 | 0.2620 | 0.1195 |
| t100_110 | 0.1807 | 0.1253 | 0.1235 | 0.1249 | 0.0995 | 0.1447 | 0.1216 | 0.1126 |
| t110_120 | 0.0985 | 0.1073 | 0.1008 | 0.0981 | 0.0962 | 0.1102 | 0.1310 | 0.1086 |
| t120_130 | 0.1205 | 0.1091 | 0.1408 | 0.1226 | 0.1067 | 0.1189 | 0.1643 | 0.1227 |
| t130_140 | 0.0742 | 0.0846 | 0.1123 | 0.0973 | 0.0759 | 0.0870 | 0.1135 | 0.0921 |
| t140_150 | 0.0528 | 0.0553 | 0.0518 | 0.0480 | 0.0518 | 0.0510 | 0.0494 | 0.0580 |
| Avg | 0.1178 | 0.1112 | 0.1134 | 0.1137 | 0.1176 | 0.1462 | 0.1591 | 0.1263 |

Table 11: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 10$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 1.0008 | 1.1603 | 0.9490 | 1.0071 | 4.4814 | 5.4392 | 4.2887 | 5.0565 |
| t10_20 | 4.7707 | 5.1289 | 4.7035 | 3.8799 | 6.6919 | 7.3585 | 7.3450 | 7.5990 |
| t20_30 | **13.6950** | **11.4263** | **14.6339** | **12.0692** | **13.6520** | **13.3192** | **14.9121** | **11.0849** |
| t30_40 | 9.0805 | 9.0859 | 8.8176 | 8.7594 | 9.0759 | 11.8167 | 9.3755 | 10.2652 |
| t40_50 | 6.3817 | 7.0730 | 5.3628 | 6.7043 | 8.8231 | 9.8210 | 8.0297 | 7.5198 |
| t50_60 | 3.6011 | 3.2805 | 3.4571 | 4.2603 | 4.1569 | 7.0983 | 5.8862 | 4.8505 |
| t60_70 | 4.7617 | 3.7658 | 3.4766 | 4.4020 | 5.2088 | 7.9596 | 6.6507 | 5.9176 |
| t70_80 | 6.6617 | 4.5918 | 5.4068 | 5.8211 | 6.4842 | 6.0633 | 12.2640 | 6.8746 |
| t80_90 | 4.0543 | 4.4358 | 3.5760 | 4.4808 | 3.6546 | 7.3053 | 6.7338 | 4.2358 |
| t90_100 | 7.3008 | 7.0282 | 6.1991 | 7.0274 | 6.0464 | 6.7147 | 11.5844 | 5.9837 |
| t100_110 | 7.9770 | 6.2897 | 6.0036 | 6.2301 | 4.9564 | 7.4691 | 6.2163 | 5.7560 |
| t110_120 | 4.4524 | 5.1315 | 4.7617 | 4.7569 | 4.5709 | 5.3707 | 6.4122 | 5.3425 |
| t120_130 | 5.3670 | 5.2231 | 6.7250 | 5.5774 | 4.9450 | 5.5836 | 7.8807 | 5.8864 |
| t130_140 | 3.5943 | 4.1070 | 5.4878 | 4.3133 | 4.0032 | 4.0915 | 5.2781 | 4.7461 |
| t140_150 | 2.7283 | 2.9242 | 2.7062 | 2.5335 | 2.7284 | 2.7345 | 2.5944 | 3.1459 |
| Avg | 5.6952 | 5.3768 | 5.4844 | 5.4548 | 5.9653 | 7.2097 | 7.6968 | 6.2843 |

Table 12: Number of points used to estimate 3D flow for dataset 2

| Number of flow vectors | | | | |
|---|---|---|---|---|
| cam1 | cam2 | cam3 | cam4 | |
| t0_10 | 128 | 103 | 142 | 95 |
| t10_20 | 52 | 34 | 60 | 37 |
| t20_30 | 52 | 30 | 51 | 25 |
| t30_40 | 112 | 82 | 108 | 84 |
| t40_50 | 31 | 43 | 46 | 60 |
| t50_60 | 93 | 57 | 68 | 72 |
| t60_70 | 123 | 107 | 83 | 66 |
| t70_80 | 106 | 31 | 62 | 41 |
| t80_90 | 94 | 47 | 61 | 55 |
| t90_100 | 123 | 96 | 30 | 66 |
| t100_110 | 106 | 91 | 42 | 56 |
| t110_120 | 80 | 111 | 55 | 46 |
| t120_130 | 55 | 96 | 57 | 62 |
| t130_t140 | 88 | 95 | 77 | 76 |
| t140_150 | 125 | 157 | 120 | 104 |

Table 13: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 4$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| t0_4 | 0.0076 | 0.0128 | 0.0110 | 0.0155 | 0.0736 | 0.0911 | 0.0693 | 0.0858 |
| t4_8 | 0.0119 | 0.0185 | 0.0097 | 0.0077 | 0.0646 | 0.0953 | 0.0652 | 0.0971 |
| t8_12 | 0.0142 | 0.0145 | 0.0121 | 0.0151 | 0.0593 | 0.0966 | 0.0581 | 0.0799 |
| t12_16 | 0.0123 | 0.0192 | 0.0099 | 0.0201 | 0.0749 | 0.0783 | 0.0751 | 0.0817 |
| t16_20 | 0.0935 | 0.0702 | 0.0835 | 0.0600 | 0.1069 | 0.1112 | 0.1077 | 0.1145 |
| t20_24 | **0.1225** | **0.1121** | **0.1391** | **0.0984** | **0.1305** | 0.1310 | **0.1330** | **0.1353** |
| t24_28 | 0.0947 | 0.0768 | 0.0974 | 0.0784 | 0.0899 | 0.0946 | 0.1025 | 0.0885 |
| t28_32 | 0.0154 | 0.0214 | 0.0250 | 0.0208 | 0.0358 | 0.0777 | 0.0389 | 0.0624 |
| t32_36 | 0.0833 | 0.0867 | 0.0806 | 0.0796 | 0.0939 | **0.1360** | 0.0903 | 0.1148 |
| t36_40 | 0.0748 | 0.0776 | 0.0803 | 0.0814 | 0.0836 | 0.1237 | 0.0995 | 0.1055 |
| t40_44 | 0.0575 | 0.0562 | 0.0508 | 0.0627 | 0.0825 | 0.1042 | 0.0753 | 0.0856 |
| t44_48 | 0.0400 | 0.0477 | 0.0372 | 0.0701 | 0.0693 | 0.1136 | 0.0664 | 0.0732 |
| t48_52 | 0.0358 | 0.0332 | 0.0300 | 0.0435 | 0.0510 | 0.1077 | 0.0710 | 0.0712 |
| t52_56 | 0.0295 | 0.0259 | 0.0334 | 0.0279 | 0.0485 | 0.1022 | 0.0887 | 0.0725 |
| t56_60 | 0.0271 | 0.0312 | 0.0255 | 0.0388 | 0.0451 | 0.1100 | 0.0877 | 0.0767 |
| t60_64 | 0.0183 | 0.0218 | 0.0168 | 0.0283 | 0.0456 | 0.1191 | 0.0852 | 0.0720 |
| t64_68 | 0.0458 | 0.0308 | 0.0330 | 0.0416 | 0.0547 | 0.1107 | 0.0950 | 0.0818 |
| t68_72 | 0.0616 | 0.0380 | 0.0447 | 0.0531 | 0.0630 | 0.1200 | 0.0944 | 0.0857 |
| t72_76 | 0.0566 | 0.0406 | 0.0446 | 0.0465 | 0.0514 | 0.0671 | 0.0989 | 0.0788 |
| t76_80 | 0.0378 | 0.0363 | 0.0423 | 0.0457 | 0.0382 | 0.0427 | 0.0997 | 0.0611 |
| t80_84 | 0.0286 | 0.0324 | 0.0413 | 0.0363 | 0.0272 | 0.0965 | 0.0885 | 0.0433 |
| t84_88 | 0.0353 | 0.0397 | 0.0309 | 0.0384 | 0.0327 | 0.0862 | 0.0454 | 0.0366 |
| t88_92 | 0.0472 | 0.0453 | 0.0490 | 0.0465 | 0.0403 | 0.0924 | 0.0480 | 0.0435 |
| t92_96 | 0.0535 | 0.0564 | 0.0569 | 0.0538 | 0.0463 | 0.0990 | 0.0656 | 0.0474 |
| t96_100 | 0.0537 | 0.0549 | 0.0600 | 0.0587 | 0.0466 | 0.0942 | 0.0810 | 0.0589 |
| t100_104 | 0.0539 | 0.0604 | 0.0633 | 0.0505 | 0.0409 | 0.0861 | 0.0848 | 0.0564 |
| t104_108 | 0.0454 | 0.0425 | 0.0585 | 0.0380 | 0.0352 | 0.0686 | 0.0784 | 0.0539 |
| t108_112 | 0.0417 | 0.0374 | 0.0504 | 0.0316 | 0.0330 | 0.0708 | 0.0693 | 0.0448 |
| t112_116 | 0.0422 | 0.0392 | 0.0480 | 0.0353 | 0.0357 | 0.0653 | 0.0875 | 0.0444 |
| t116_120 | 0.0390 | 0.0430 | 0.0441 | 0.0342 | 0.0365 | 0.0667 | 0.0874 | 0.0408 |
| t120_124 | 0.0371 | 0.0434 | 0.0488 | 0.0444 | 0.0367 | 0.0577 | 0.0821 | 0.0462 |
| t124_128 | 0.0312 | 0.0439 | 0.0548 | 0.0429 | 0.0337 | 0.0585 | 0.0780 | 0.0467 |
| t128_132 | 0.0308 | 0.0391 | 0.0463 | 0.0278 | 0.0338 | 0.0462 | 0.0635 | 0.0355 |
| t132_126 | 0.0282 | 0.0358 | 0.0439 | 0.0338 | 0.0344 | 0.0401 | 0.0559 | 0.0386 |
| t136_140 | 0.0255 | 0.0261 | 0.0285 | 0.0268 | 0.0347 | 0.0344 | 0.0394 | 0.0348 |
| t140_144 | 0.0236 | 0.0266 | 0.0219 | 0.0234 | 0.0287 | 0.0325 | 0.0338 | 0.0328 |
| t144_148 | 0.0221 | 0.0252 | 0.0202 | 0.0218 | 0.0279 | 0.0312 | 0.0317 | 0.0311 |
| Avg | 0.0427 | 0.0422 | 0.0452 | 0.0427 | 0.0531 | 0.0854 | 0.0763 | 0.0665 |

Table 14: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 4$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| t0_4 | 0.0139 | 0.0178 | 0.0234 | 0.0205 | 0.0894 | 0.1074 | 0.0821 | 0.0981 |
| t4_8 | 0.0144 | 0.0219 | 0.0131 | 0.0086 | 0.0752 | 0.1124 | 0.0749 | 0.1145 |
| t8_12 | 0.0235 | 0.0160 | 0.0182 | 0.0180 | 0.0656 | 0.1172 | 0.0646 | 0.0896 |
| t12_16 | 0.0155 | 0.0242 | 0.0114 | 0.0241 | 0.0788 | 0.0885 | 0.0787 | 0.0917 |
| t16_20 | 0.1138 | 0.0795 | 0.1021 | 0.0687 | 0.1154 | 0.1202 | 0.1146 | 0.1220 |
| t20_24 | **0.1337** | **0.1251** | **0.1532** | **0.1161** | **0.1387** | 0.1451 | **0.1442** | **0.1484** |
| t24_28 | 0.1122 | 0.0884 | 0.1098 | 0.0858 | 0.0996 | 0.1032 | 0.1135 | 0.0984 |
| t28_32 | 0.0168 | 0.0246 | 0.0289 | 0.0232 | 0.0400 | 0.0881 | 0.0428 | 0.0712 |
| t32_36 | 0.0942 | 0.0937 | 0.0898 | 0.0906 | 0.1036 | 0.1440 | 0.0983 | 0.1218 |
| t36_40 | 0.0873 | 0.0876 | 0.0879 | 0.0903 | 0.0951 | 0.1343 | 0.1085 | 0.1133 |
| t40_44 | 0.0622 | 0.0635 | 0.0583 | 0.0723 | 0.0867 | 0.1135 | 0.0826 | 0.0927 |
| t44_48 | 0.0460 | 0.0557 | 0.0447 | 0.0819 | 0.0754 | 0.1234 | 0.0753 | 0.0831 |
| t48_52 | 0.0392 | 0.0376 | 0.0362 | 0.0488 | 0.0575 | 0.1161 | 0.0947 | 0.0800 |
| t52_56 | 0.0324 | 0.0299 | 0.0365 | 0.0316 | 0.0533 | 0.1108 | 0.1191 | 0.0806 |
| t56_60 | 0.0300 | 0.0356 | 0.0288 | 0.0422 | 0.0505 | 0.1201 | 0.0995 | 0.0842 |
| t60_64 | 0.0221 | 0.0257 | 0.0207 | 0.0317 | 0.0497 | **0.1453** | 0.0956 | 0.0818 |
| t64_68 | 0.0510 | 0.0347 | 0.0367 | 0.0480 | 0.0580 | 0.1285 | 0.1024 | 0.0874 |
| t68_72 | 0.0675 | 0.0463 | 0.0490 | 0.0588 | 0.0667 | 0.1385 | 0.1019 | 0.0968 |
| t72_76 | 0.0636 | 0.0472 | 0.0514 | 0.0514 | 0.0579 | 0.0872 | 0.1066 | 0.0889 |
| t76_80 | 0.0436 | 0.0426 | 0.0461 | 0.0538 | 0.0424 | 0.0578 | 0.1067 | 0.0702 |
| t80_84 | 0.0329 | 0.0350 | 0.0468 | 0.0419 | 0.0311 | 0.1187 | 0.1406 | 0.0510 |
| t84_88 | 0.0414 | 0.0434 | 0.0379 | 0.0437 | 0.0368 | 0.0983 | 0.0804 | 0.0419 |
| t88_92 | 0.0542 | 0.0525 | 0.0556 | 0.0552 | 0.0453 | 0.1153 | 0.0564 | 0.0481 |
| t92_96 | 0.0591 | 0.0639 | 0.0663 | 0.0637 | 0.0505 | 0.1224 | 0.0705 | 0.0526 |
| t96_100 | 0.0593 | 0.0614 | 0.0682 | 0.0636 | 0.0512 | 0.1228 | 0.0918 | 0.0634 |
| t100_104 | 0.0646 | 0.0652 | 0.0737 | 0.0551 | 0.0454 | 0.0962 | 0.0961 | 0.0601 |
| t104_108 | 0.0537 | 0.0469 | 0.0669 | 0.0420 | 0.0390 | 0.0781 | 0.0912 | 0.0581 |
| t108_112 | 0.0517 | 0.0411 | 0.0599 | 0.0357 | 0.0373 | 0.0840 | 0.0853 | 0.0487 |
| t112_116 | 0.0487 | 0.0443 | 0.0557 | 0.0407 | 0.0404 | 0.0769 | 0.1021 | 0.0491 |
| t116_120 | 0.0451 | 0.0497 | 0.0527 | 0.0404 | 0.0413 | 0.0782 | 0.1003 | 0.0467 |
| t120_124 | 0.0453 | 0.0499 | 0.0560 | 0.0519 | 0.0438 | 0.0671 | 0.0959 | 0.0520 |
| t124_128 | 0.0407 | 0.0522 | 0.0618 | 0.0533 | 0.0392 | 0.0696 | 0.0925 | 0.0530 |
| t128_132 | 0.0370 | 0.0466 | 0.0559 | 0.0339 | 0.0390 | 0.0568 | 0.0785 | 0.0401 |
| t132_126 | 0.0324 | 0.0399 | 0.0502 | 0.0464 | 0.0371 | 0.0469 | 0.0665 | 0.0422 |
| t136_140 | 0.0296 | 0.0296 | 0.0326 | 0.0315 | 0.0365 | 0.0383 | 0.0462 | 0.0369 |
| t140_144 | 0.0265 | 0.0288 | 0.0237 | 0.0262 | 0.0312 | 0.0350 | 0.0378 | 0.0346 |
| t144_148 | 0.0251 | 0.0280 | 0.0221 | 0.0248 | 0.0307 | 0.0328 | 0.0349 | 0.0326 |
| Avg | 0.0495 | 0.0480 | 0.0522 | 0.0491 | 0.0588 | 0.0983 | 0.0885 | 0.0737 |

Table 15: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 2 with $\Delta = 4$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| t0_4 | 0.4350 | 0.7339 | 0.6308 | 0.8842 | 4.1956 | 5.1835 | 3.9570 | 4.8941 |
| t4_8 | 0.6780 | 1.0509 | 0.5557 | 0.4406 | 3.6857 | 5.4091 | 3.7207 | 5.5134 |
| t8_12 | 0.8023 | 0.8223 | 0.6866 | 0.8526 | 3.3720 | 5.4583 | 3.2993 | 4.5360 |
| t12_16 | 0.6926 | 1.0766 | 0.5548 | 1.1252 | 4.2282 | 4.4162 | 4.2369 | 4.6120 |
| t16_20 | 5.2868 | 3.9429 | 4.7130 | 3.3833 | 6.0485 | 6.2633 | 6.0923 | 6.4566 |
| t20_24 | **6.9488** | **6.3769** | **7.8810** | **5.6046** | **7.4138** | 7.4492 | **7.5480** | **7.6948** |
| t24_28 | 5.3918 | 4.3871 | 5.5522 | 4.4806 | 5.1291 | 5.4005 | 5.8483 | 5.0521 |
| t28_32 | 0.8794 | 1.2285 | 1.4335 | 1.1930 | 2.0471 | 4.4354 | 2.2256 | 3.5644 |
| t32_36 | 4.7521 | 4.9511 | 4.6080 | 4.5446 | 5.3576 | **7.7453** | 5.1591 | 6.5436 |
| t36_40 | 4.2650 | 4.4313 | 4.5851 | 4.6444 | 4.7697 | 7.0288 | 5.6694 | 6.0073 |
| t40_44 | 3.2869 | 3.2085 | 2.9025 | 3.5735 | 4.7094 | 5.9211 | 4.2939 | 4.8750 |
| t44_48 | 2.2835 | 2.7263 | 2.1246 | 3.9924 | 3.9511 | 6.4450 | 3.7835 | 4.1684 |
| t48_52 | 2.0456 | 1.8988 | 1.7180 | 2.4891 | 2.9110 | 6.1229 | 4.0274 | 4.0634 |
| t52_56 | 1.6865 | 1.4811 | 1.9143 | 1.5991 | 2.7711 | 5.8230 | 5.0126 | 4.1367 |
| t56_60 | 1.5502 | 1.7851 | 1.4599 | 2.2220 | 2.5800 | 6.2678 | 5.0065 | 4.3793 |
| t60_64 | 1.0488 | 1.2458 | 0.9594 | 1.6209 | 2.6087 | 6.7284 | 4.8696 | 4.1033 |
| t64_68 | 2.6178 | 1.7638 | 1.8864 | 2.3766 | 3.1275 | 6.2859 | 5.4272 | 4.6617 |
| t68_72 | 3.5185 | 2.1708 | 2.5553 | 3.0302 | 3.6031 | 6.7985 | 5.3894 | 4.8753 |
| t72_76 | 3.2313 | 2.3163 | 2.5494 | 2.6602 | 2.9365 | 3.8203 | 5.6441 | 4.4857 |
| t76_80 | 2.1624 | 2.0711 | 2.4142 | 2.6122 | 2.1860 | 2.4396 | 5.6952 | 3.4869 |
| t80_84 | 1.6359 | 1.8539 | 2.3620 | 2.0781 | 1.5558 | 5.4722 | 4.9563 | 2.4707 |
| t84_88 | 2.0193 | 2.2667 | 1.7683 | 2.1943 | 1.8682 | 4.8981 | 2.5555 | 2.0900 |
| t88_92 | 2.6930 | 2.5824 | 2.7964 | 2.6511 | 2.3035 | 5.2208 | 2.7314 | 2.4850 |
| t92_96 | 3.0490 | 3.2183 | 3.2455 | 3.0684 | 2.6403 | 5.5928 | 3.7303 | 2.7048 |
| t96_100 | 3.0600 | 3.1291 | 3.4234 | 3.3450 | 2.6578 | 5.3069 | 4.5954 | 3.3542 |
| t100_104 | 3.0751 | 3.4471 | 3.6122 | 2.8797 | 2.3319 | 4.8828 | 4.7953 | 3.2140 |
| t104_108 | 2.5893 | 2.4262 | 3.3397 | 2.1665 | 2.0071 | 3.8890 | 4.4333 | 3.0700 |
| t108_112 | 2.3819 | 2.1320 | 2.8747 | 1.8053 | 1.8842 | 4.0059 | 3.9175 | 2.5538 |
| t112_116 | 2.4064 | 2.2346 | 2.7396 | 2.0126 | 2.0361 | 3.6952 | 4.9415 | 2.5307 |
| t116_120 | 2.2268 | 2.4500 | 2.5159 | 1.9496 | 2.0884 | 3.7790 | 4.9363 | 2.3258 |
| t120_124 | 2.1214 | 2.4747 | 2.7849 | 2.5313 | 2.0951 | 3.2765 | 4.6470 | 2.6411 |
| t124_128 | 1.7823 | 2.5089 | 3.1250 | 2.4526 | 1.9274 | 3.3345 | 4.4231 | 2.6681 |
| t128_132 | 1.7630 | 2.2356 | 2.6440 | 1.5910 | 1.9350 | 2.6375 | 3.6092 | 2.0337 |
| t132_126 | 1.6144 | 2.0509 | 2.5096 | 1.9303 | 1.9708 | 2.2909 | 3.1878 | 2.2102 |
| t136_140 | 1.4604 | 1.4959 | 1.6291 | 1.5359 | 1.9846 | 1.9681 | 2.2506 | 1.9905 |
| t140_144 | 1.3511 | 1.5255 | 1.2566 | 1.3418 | 1.6463 | 1.8580 | 1.9351 | 1.8768 |
| t144_148 | 1.2653 | 1.4442 | 1.1575 | 1.2499 | 1.6006 | 1.7852 | 1.8141 | 1.7833 |
| Avg | 2.4340 | 2.4093 | 2.5802 | 2.4355 | 3.0315 | 4.8469 | 4.3342 | 3.7868 |

Table 16: Number of flow vectors for dataset 2 with $\Delta = 4$

| Number of flow vectors | | | | |
|---|---|---|---|---|
| Seq. | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 128 | 103 | 142 | 95 |
| t4_8 | 91 | 64 | 102 | 64 |
| t8_12 | 63 | 45 | 75 | 42 |
| t12_16 | 45 | 30 | 48 | 33 |
| t16_20 | 50 | 27 | 52 | 30 |
| t20_24 | 52 | 30 | 51 | 25 |
| t24_28 | 54 | 21 | 56 | 24 |
| t28_32 | 82 | 44 | 84 | 44 |
| t32_36 | 45 | 62 | 53 | 62 |
| t36_40 | 31 | 57 | 35 | 54 |
| t40_44 | 31 | 43 | 46 | 60 |
| t44_48 | 58 | 25 | 66 | 53 |
| t48_52 | 90 | 31 | 78 | 70 |
| t52_56 | 112 | 67 | 70 | 73 |
| t56_60 | 140 | 110 | 82 | 92 |
| t60_64 | 123 | 107 | 83 | 66 |
| t64_68 | 119 | 66 | 78 | 54 |
| t68_72 | 104 | 43 | 70 | 46 |
| t72_76 | 104 | 38 | 54 | 40 |
| t76_80 | 97 | 38 | 58 | 40 |
| t80_84 | 94 | 47 | 61 | 55 |
| t84_88 | 116 | 96 | 49 | 58 |
| t88_92 | 130 | 117 | 39 | 61 |
| t92_96 | 112 | 74 | 34 | 57 |
| t96_100 | 111 | 83 | 44 | 58 |
| t100_104 | 106 | 91 | 42 | 56 |
| t104_108 | 97 | 103 | 56 | 47 |
| t108_112 | 82 | 110 | 51 | 49 |
| t112_116 | 66 | 6110 | 50 | 46 |
| t116_120 | 63 | 98 | 46 | 48 |
| t120_124 | 55 | 96 | 57 | 62 |
| t124_128 | 61 | 95 | 66 | 65 |
| t128_132 | 74 | 92 | 69 | 72 |
| t132_126 | 88 | 106 | 89 | 88 |
| t136_140 | 98 | 130 | 111 | 96 |
| t140_144 | 125 | 157 | 120 | 104 |
| t144_148 | 129 | 154 | 119 | 112 |

### 1.3 Dataset 3

Table 17: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 10$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0504 | 0.0473 | 0.0468 | 0.0477 | 0.0868 | 0.1074 | 0.0852 | 0.1048 |
| t10_20 | **0.0976** | **0.0976** | **0.0946** | **0.0861** | **0.1105** | **0.1379** | **0.1118** | **0.1332** |
| t20_30 | 0.0390 | 0.0407 | 0.0594 | 0.0379 | 0.0463 | 0.0916 | 0.0585 | 0.0855 |
| t30_40 | 0.0305 | 0.0301 | 0.0378 | 0.0365 | 0.0357 | 0.0716 | 0.0380 | 0.0696 |
| t40_50 | 0.0205 | 0.0215 | 0.0208 | 0.0193 | 0.0344 | 0.0767 | 0.0415 | 0.0741 |
| t50_60 | 0.0177 | 0.0238 | 0.0217 | 0.0183 | 0.0322 | 0.0796 | 0.0413 | 0.0731 |
| t60_70 | 0.0140 | 0.0189 | 0.0227 | 0.0178 | 0.0287 | 0.0746 | 0.0336 | 0.0723 |
| t70_80 | 0.0150 | 0.0258 | 0.0187 | 0.0165 | 0.0293 | 0.0743 | 0.0307 | 0.0712 |
| t80_90 | 0.0115 | 0.0277 | 0.0166 | 0.0154 | 0.0277 | 0.0725 | 0.0287 | 0.0696 |
| t90_100 | 0.0109 | 0.0249 | 0.0156 | 0.0164 | 0.0258 | 0.0688 | 0.0272 | 0.0735 |
| t100_110 | 0.0097 | 0.0222 | 0.0136 | 0.0154 | 0.0253 | 0.0691 | 0.0272 | 0.0674 |
| t110_120 | 0.0093 | 0.0215 | 0.0144 | 0.0148 | 0.0251 | 0.0694 | 0.0262 | 0.0648 |
| t120_130 | 0.0096 | 0.0125 | 0.0120 | 0.0135 | 0.0234 | 0.0695 | 0.0254 | 0.0689 |
| t130_t140 | 0.0082 | 0.0119 | 0.0108 | 0.0119 | 0.0214 | 0.0681 | 0.0253 | 0.0656 |
| t140_150 | 0.0085 | 0.0114 | 0.0117 | 0.0120 | 0.0206 | 0.0603 | 0.0244 | 0.0669 |
| Avg | 0.0235 | 0.0292 | 0.0278 | 0.0253 | 0.0382 | 0.0794 | 0.0417 | 0.0774 |

Table 18: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 10$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 0.0602 | 0.0581 | 0.0560 | 0.0577 | 0.1036 | 0.1194 | 0.0991 | 0.1195 |
| t10_20 | **0.1144** | **0.1192** | **0.1058** | **0.1007** | **0.1241** | **0.1504** | **0.1258** | **0.1455** |
| t20_30 | 0.0419 | 0.0465 | 0.0718 | 0.0428 | 0.0489 | 0.1014 | 0.0650 | 0.0939 |
| t30_40 | 0.0348 | 0.0338 | 0.0429 | 0.0428 | 0.0381 | 0.0793 | 0.0404 | 0.0800 |
| t40_50 | 0.0232 | 0.0245 | 0.0247 | 0.0235 | 0.0379 | 0.0854 | 0.0457 | 0.0844 |
| t50_60 | 0.0202 | 0.0274 | 0.0248 | 0.0218 | 0.0348 | 0.0899 | 0.0461 | 0.0849 |
| t60_70 | 0.0160 | 0.0231 | 0.0263 | 0.0209 | 0.0315 | 0.0835 | 0.0367 | 0.0848 |
| t70_80 | 0.0169 | 0.0291 | 0.0217 | 0.0197 | 0.0318 | 0.0821 | 0.0338 | 0.0830 |
| t80_90 | 0.0134 | 0.0342 | 0.0194 | 0.0180 | 0.0302 | 0.0812 | 0.0313 | 0.0820 |
| t90_100 | 0.0120 | 0.0282 | 0.0179 | 0.0192 | 0.0281 | 0.0758 | 0.0295 | 0.0849 |
| t100_110 | 0.0111 | 0.0254 | 0.0158 | 0.0188 | 0.0273 | 0.0753 | 0.0292 | 0.0759 |
| t110_120 | 0.0104 | 0.0261 | 0.0165 | 0.0168 | 0.0272 | 0.0757 | 0.0283 | 0.0742 |
| t120_130 | 0.0105 | 0.0147 | 0.0141 | 0.0148 | 0.0256 | 0.0756 | 0.0274 | 0.0814 |
| t130_t140 | 0.0094 | 0.0142 | 0.0124 | 0.0132 | 0.0234 | 0.0745 | 0.0274 | 0.0745 |
| t140_150 | 0.0098 | 0.0138 | 0.0133 | 0.0134 | 0.0224 | 0.0650 | 0.0263 | 0.0795 |
| Avg | 0.0269 | 0.0346 | 0.0322 | 0.0296 | 0.0423 | 0.0876 | 0.0461 | 0.0886 |

Table 19: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 10$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 2.8469 | 2.6714 | 2.6397 | 2.6963 | 4.9097 | 6.0758 | 4.8270 | 5.9255 |
| t10_20 | **5.4736** | **5.4810** | **5.2895** | **4.8155** | **6.2243** | **7.7310** | **6.2948** | **7.4571** |
| t20_30 | 2.2338 | 2.3302 | 3.3911 | 2.1703 | 2.6493 | 5.2221 | 3.3444 | 4.8800 |
| t30_40 | 1.7455 | 1.7250 | 2.1657 | 2.0865 | 2.0444 | 4.0844 | 2.1749 | 3.9713 |
| t40_50 | 1.1766 | 1.2327 | 1.1920 | 1.1055 | 1.9704 | 4.3818 | 2.3739 | 4.2300 |
| t50_60 | 1.0133 | 1.3632 | 1.2412 | 1.0457 | 1.8416 | 4.5444 | 2.3647 | 4.1726 |
| t60_70 | 0.7994 | 1.0835 | 1.2995 | 1.0225 | 1.6417 | 4.2608 | 1.9221 | 4.1247 |
| t70_80 | 0.8621 | 1.4750 | 1.0698 | 0.9443 | 1.6777 | 4.2429 | 1.7606 | 4.0622 |
| t80_90 | 0.6583 | 1.5865 | 0.9498 | 0.8801 | 1.5890 | 4.1399 | 1.6459 | 3.9692 |
| t90_100 | 0.6267 | 1.4255 | 0.8912 | 0.9392 | 1.4775 | 3.9296 | 1.5572 | 4.1933 |
| t100_110 | 0.5565 | 1.2719 | 0.7815 | 0.8804 | 1.4493 | 3.9471 | 1.5590 | 3.8528 |
| t110_120 | 0.5314 | 1.2301 | 0.8259 | 0.8457 | 1.4360 | 3.9659 | 1.4995 | 3.7050 |
| t120_130 | 0.5489 | 0.7177 | 0.6884 | 0.7737 | 1.3423 | 3.9704 | 1.4550 | 3.9339 |
| t130_t140 | 0.4694 | 0.6828 | 0.6184 | 0.6829 | 1.2278 | 3.8892 | 1.4487 | 3.7500 |
| t140_150 | 0.4863 | 0.6532 | 0.6685 | 0.6901 | 1.1791 | 3.4498 | 1.3967 | 3.8204 |
| Avg | 1.3352 | 1.6620 | 1.5808 | 1.4386 | 2.1773 | 4.5223 | 2.3750 | 4.4032 |

Table 20: Number of points used to estimate 3D flow for dataset 3

| Number of flow vectors | | | | |
|---|---|---|---|---|
| Seq. | cam1 | cam2 | cam3 | cam4 |
| t0_10 | 126 | 104 | 141 | 94 |
| t10_20 | 85 | 58 | 99 | 58 |
| t20_30 | 98 | 78 | 104 | 77 |
| t30_40 | 103 | 84 | 113 | 91 |
| t40_50 | 103 | 94 | 111 | 91 |
| t50_60 | 104 | 90 | 98 | 87 |
| t60_70 | 96 | 88 | 101 | 92 |
| t70_80 | 94 | 91 | 90 | 94 |
| t80_90 | 102 | 85 | 96 | 89 |
| t90_100 | 92 | 82 | 91 | 84 |
| t100_110 | 88 | 82 | 96 | 87 |
| t110_120 | 96 | 75 | 88 | 78 |
| t120_130 | 94 | 73 | 92 | 79 |
| t130_140 | 83 | 78 | 84 | 83 |
| t140_150 | 89 | 77 | 91 | 80 |

Table 21: EPE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 4$

| | EPE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.0134 | 0.0176 | 0.0132 | 0.0160 | **0.0721** | 0.0914 | 0.0696 | 0.0873 |
| t4_8 | 0.0243 | 0.0223 | 0.0239 | 0.0226 | 0.0669 | 0.0905 | 0.0679 | 0.0968 |
| t8_12 | 0.0372 | 0.0326 | 0.0408 | 0.0341 | 0.0659 | 0.0898 | 0.0701 | **0.0982** |
| t12_16 | **0.0438** | **0.0419** | **0.0524** | **0.0494** | 0.0686 | **0.0997** | **0.0728** | 0.0969 |
| t16_20 | 0.0359 | 0.0387 | 0.0386 | 0.0414 | 0.0548 | 0.0891 | 0.0540 | 0.0960 |
| t20_24 | 0.0270 | 0.0268 | 0.0350 | 0.0357 | 0.0384 | 0.0835 | 0.0532 | 0.0774 |
| t24_28 | 0.0153 | 0.0210 | 0.0251 | 0.0191 | 0.0349 | 0.0766 | 0.0477 | 0.0761 |
| t28_32 | 0.0202 | 0.0165 | 0.0284 | 0.0219 | 0.0341 | 0.0688 | 0.0487 | 0.0678 |
| t32_36 | 0.0147 | 0.0146 | 0.0253 | 0.0268 | 0.0337 | 0.0668 | 0.0462 | 0.0701 |
| t36_40 | 0.0114 | 0.0143 | 0.0191 | 0.0175 | 0.0323 | 0.0710 | 0.0521 | 0.0705 |
| t40_44 | 0.0102 | 0.0120 | 0.0159 | 0.0171 | 0.0332 | 0.0733 | 0.0459 | 0.0722 |
| t44_48 | 0.0098 | 0.0205 | 0.0138 | 0.0141 | 0.0308 | 0.0763 | 0.0467 | 0.0766 |
| t48_52 | 0.0081 | 0.0189 | 0.0142 | 0.0124 | 0.0297 | 0.0750 | 0.0435 | 0.0713 |
| t52_56 | 0.0082 | 0.0187 | 0.0128 | 0.0124 | 0.0304 | 0.0775 | 0.0429 | 0.0758 |
| t56_60 | 0.0081 | 0.0203 | 0.0169 | 0.0149 | 0.0293 | 0.0758 | 0.0400 | 0.0716 |
| t60_64 | 0.0077 | 0.0131 | 0.0147 | 0.0128 | 0.0263 | 0.0745 | 0.0363 | 0.0711 |
| t64_68 | 0.0084 | 0.0124 | 0.0140 | 0.0124 | 0.0285 | 0.0719 | 0.0333 | 0.0717 |
| t68_72 | 0.0076 | 0.0176 | 0.0150 | 0.0128 | 0.0284 | 0.0722 | 0.0323 | 0.0736 |
| t72_76 | 0.0079 | 0.0119 | 0.0137 | 0.0126 | 0.0271 | 0.0749 | 0.0301 | 0.0700 |
| t76_80 | 0.0070 | 0.0178 | 0.0121 | 0.0133 | 0.0259 | 0.0714 | 0.0302 | 0.0673 |
| t80_84 | 0.0072 | 0.0198 | 0.0123 | 0.0127 | 0.0255 | 0.0709 | 0.0284 | 0.0708 |
| t84_88 | 0.0072 | 0.0173 | 0.0131 | 0.0135 | 0.0265 | 0.0723 | 0.0270 | 0.0680 |
| t88_92 | 0.0062 | 0.0185 | 0.0124 | 0.0132 | 0.0244 | 0.0704 | 0.0265 | 0.0694 |
| t92_96 | 0.0066 | 0.0106 | 0.0115 | 0.0137 | 0.0251 | 0.0693 | 0.0257 | 0.0778 |
| t96_100 | 0.0063 | 0.0101 | 0.0122 | 0.0132 | 0.0258 | 0.0661 | 0.0261 | 0.0687 |
| t100_104 | 0.0065 | 0.0178 | 0.0097 | 0.0120 | 0.0258 | 0.0696 | 0.0267 | 0.0660 |
| t104_108 | 0.0069 | 0.0105 | 0.0107 | 0.0114 | 0.0231 | 0.0680 | 0.0257 | 0.0668 |
| t108_112 | 0.0056 | 0.0101 | 0.0097 | 0.0132 | 0.0232 | 0.0674 | 0.0247 | 0.0671 |
| t112_116 | 0.0060 | 0.0100 | 0.0092 | 0.0120 | 0.0241 | 0.0691 | 0.0245 | 0.0678 |
| t116_120 | 0.0064 | 0.0076 | 0.0096 | 0.0107 | 0.0216 | 0.0643 | 0.0242 | 0.0689 |
| t120_124 | 0.0069 | 0.0092 | 0.0089 | 0.0100 | 0.0224 | 0.0704 | 0.0240 | 0.0662 |
| t124_128 | 0.0062 | 0.0085 | 0.0077 | 0.0097 | 0.0221 | 0.0708 | 0.0232 | 0.0654 |
| t128_132 | 0.0064 | 0.0083 | 0.0082 | 0.0084 | 0.0214 | 0.0690 | 0.0234 | 0.0643 |
| t132_126 | 0.0063 | 0.0080 | 0.0076 | 0.0094 | 0.0228 | 0.0682 | 0.0232 | 0.0663 |
| t136_140 | 0.0061 | 0.0084 | 0.0081 | 0.0096 | 0.0209 | 0.0646 | 0.0227 | 0.0603 |
| t140_144 | 0.0058 | 0.0089 | 0.0079 | 0.0095 | 0.0206 | 0.0615 | 0.0230 | 0.0667 |
| t144_148 | 0.0072 | 0.0084 | 0.0074 | 0.0088 | 0.0210 | 0.0595 | 0.0223 | 0.0646 |
| Avg | 0.0118 | 0.0163 | 0.0165 | 0.0165 | 0.0321 | 0.0736 | 0.0374 | 0.0731 |

Table 22: RMSE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 4$

| | RMSE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.0192 | 0.0214 | 0.0225 | 0.0216 | **0.0893** | 0.1069 | 0.0828 | 0.1027 |
| t4_8 | 0.0284 | 0.0282 | 0.0282 | 0.0286 | 0.0792 | 0.1042 | 0.0815 | **0.1167** |
| t8_12 | 0.0423 | 0.0390 | 0.0459 | 0.0420 | 0.0760 | 0.1033 | 0.0834 | 0.1136 |
| t12_16 | **0.0514** | **0.0488** | **0.0580** | **0.0579** | 0.0792 | **0.1146** | **0.0860** | 0.1068 |
| t16_20 | 0.0394 | 0.0436 | 0.0426 | 0.0450 | 0.0607 | 0.1029 | 0.0628 | 0.1097 |
| t20_24 | 0.0297 | 0.0307 | 0.0408 | 0.0412 | 0.0423 | 0.0956 | 0.0620 | 0.0865 |
| t24_28 | 0.0170 | 0.0245 | 0.0275 | 0.0214 | 0.0383 | 0.0880 | 0.0594 | 0.0894 |
| t28_32 | 0.0224 | 0.0180 | 0.0325 | 0.0257 | 0.0377 | 0.0786 | 0.0593 | 0.0787 |
| t32_36 | 0.0177 | 0.0164 | 0.0292 | 0.0327 | 0.0376 | 0.0758 | 0.0563 | 0.0801 |
| t36_40 | 0.0130 | 0.0157 | 0.0212 | 0.0224 | 0.0359 | 0.0800 | 0.0617 | 0.0812 |
| t40_44 | 0.0116 | 0.0140 | 0.0177 | 0.0206 | 0.0373 | 0.0825 | 0.0545 | 0.0829 |
| t44_48 | 0.0114 | 0.0241 | 0.0160 | 0.0148 | 0.0346 | 0.0860 | 0.0565 | 0.0904 |
| t48_52 | 0.0093 | 0.0223 | 0.0165 | 0.0133 | 0.0332 | 0.0847 | 0.0516 | 0.0830 |
| t52_56 | 0.0095 | 0.0218 | 0.0154 | 0.0135 | 0.0340 | 0.0878 | 0.0504 | 0.0900 |
| t56_60 | 0.0093 | 0.0239 | 0.0193 | 0.0161 | 0.0329 | 0.0855 | 0.0457 | 0.0836 |
| t60_64 | 0.0088 | 0.0152 | 0.0171 | 0.0141 | 0.0298 | 0.0841 | 0.0409 | 0.0829 |
| t64_68 | 0.0094 | 0.0142 | 0.0158 | 0.0141 | 0.0316 | 0.0807 | 0.0372 | 0.0826 |
| t68_72 | 0.0084 | 0.0199 | 0.0181 | 0.0147 | 0.0313 | 0.0801 | 0.0365 | 0.0861 |
| t72_76 | 0.0095 | 0.0138 | 0.0158 | 0.0139 | 0.0303 | 0.0844 | 0.0341 | 0.0798 |
| t76_80 | 0.0077 | 0.0204 | 0.0138 | 0.0153 | 0.0288 | 0.0798 | 0.0336 | 0.0777 |
| t80_84 | 0.0083 | 0.0229 | 0.0139 | 0.0142 | 0.0285 | 0.0800 | 0.0315 | 0.0837 |
| t84_88 | 0.0080 | 0.0195 | 0.0146 | 0.0161 | 0.0293 | 0.0800 | 0.0299 | 0.0785 |
| t88_92 | 0.0069 | 0.0214 | 0.0136 | 0.0149 | 0.0272 | 0.0781 | 0.0293 | 0.0815 |
| t92_96 | 0.0073 | 0.0124 | 0.0131 | 0.0161 | 0.0275 | 0.0768 | 0.0287 | 0.0895 |
| t96_100 | 0.0069 | 0.0116 | 0.0133 | 0.0158 | 0.0282 | 0.0744 | 0.0286 | 0.0785 |
| t100_104 | 0.0073 | 0.0206 | 0.0109 | 0.0136 | 0.0282 | 0.0762 | 0.0291 | 0.0754 |
| t104_108 | 0.0078 | 0.0121 | 0.0122 | 0.0132 | 0.0256 | 0.0740 | 0.0283 | 0.0761 |
| t108_112 | 0.0063 | 0.0118 | 0.0113 | 0.0152 | 0.0256 | 0.0734 | 0.0272 | 0.0761 |
| t112_116 | 0.0068 | 0.0117 | 0.0105 | 0.0137 | 0.0264 | 0.0762 | 0.0271 | 0.0769 |
| t116_120 | 0.0074 | 0.0092 | 0.0108 | 0.0119 | 0.0239 | 0.0697 | 0.0267 | 0.0810 |
| t120_124 | 0.0077 | 0.0113 | 0.0100 | 0.0111 | 0.0247 | 0.0766 | 0.0263 | 0.0789 |
| t124_128 | 0.0073 | 0.0103 | 0.0086 | 0.0104 | 0.0241 | 0.0776 | 0.0256 | 0.0750 |
| t128_132 | 0.0075 | 0.0103 | 0.0092 | 0.0089 | 0.0236 | 0.0759 | 0.0258 | 0.0740 |
| t132_126 | 0.0076 | 0.0099 | 0.0086 | 0.0098 | 0.0248 | 0.0748 | 0.0255 | 0.0755 |
| t136_140 | 0.0072 | 0.0109 | 0.0093 | 0.0101 | 0.0230 | 0.0696 | 0.0250 | 0.0704 |
| t140_144 | 0.0071 | 0.0111 | 0.0090 | 0.0102 | 0.0227 | 0.0664 | 0.0253 | 0.0798 |
| t144_148 | 0.0084 | 0.0107 | 0.0084 | 0.0094 | 0.0229 | 0.0641 | 0.0244 | 0.0768 |
| Avg | 0.0135 | 0.0190 | 0.0190 | 0.0190 | 0.0361 | 0.0824 | 0.0433 | 0.0847 |

Table 23: AAE error for 3D flow estimated by RAFT-3D and CPD for dataset 3 with $\Delta = 4$

| | AAE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RAFT-3D | | | | CPD | | | |
| Seq. | cam1 | cam2 | cam3 | cam4 | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 0.7661 | 1.0073 | 0.7565 | 0.9137 | **4.1084** | 5.2029 | 3.9720 | 4.9716 |
| t4_8 | 1.3880 | 1.2745 | 1.3633 | 1.2943 | 3.8197 | 5.1495 | 3.8748 | 5.4969 |
| t8_12 | 2.1190 | 1.8581 | 2.3246 | 1.9434 | 3.7622 | 5.1013 | 3.9956 | **5.5724** |
| t12_16 | **2.4964** | **2.3875** | **2.9840** | **2.8140** | 3.9166 | **5.6585** | **4.1518** | 5.5119 |
| t16_20 | 2.0493 | 2.2108 | 2.2075 | 2.3650 | 3.1327 | 5.0735 | 3.0897 | 5.4604 |
| t20_24 | 1.5446 | 1.5335 | 2.0046 | 2.0443 | 2.1985 | 4.7601 | 3.0446 | 4.4170 |
| t24_28 | 0.8745 | 1.2027 | 1.4397 | 1.0948 | 2.0000 | 4.3678 | 2.7242 | 4.3416 |
| t28_32 | 1.1596 | 0.9478 | 1.6285 | 1.2537 | 1.9503 | 3.9272 | 2.7803 | 3.8673 |
| t32_36 | 0.8431 | 0.8353 | 1.4490 | 1.5377 | 1.9314 | 3.8121 | 2.6395 | 4.0019 |
| t36_40 | 0.6547 | 0.8187 | 1.0923 | 1.0009 | 1.8473 | 4.0556 | 2.9800 | 4.0224 |
| t40_44 | 0.5835 | 0.6886 | 0.9136 | 0.9814 | 1.8996 | 4.1865 | 2.6264 | 4.1195 |
| t44_48 | 0.5615 | 1.1762 | 0.7902 | 0.8095 | 1.7642 | 4.3572 | 2.6721 | 4.3707 |
| t48_52 | 0.4654 | 1.0851 | 0.8122 | 0.7095 | 1.7038 | 4.2844 | 2.4900 | 4.0694 |
| t52_56 | 0.4710 | 1.0714 | 0.7334 | 0.7116 | 1.7436 | 4.4259 | 2.4522 | 4.3244 |
| t56_60 | 0.4648 | 1.1652 | 0.9702 | 0.8516 | 1.6783 | 4.3299 | 2.2870 | 4.0883 |
| t60_64 | 0.4432 | 0.7502 | 0.8396 | 0.7320 | 1.5036 | 4.2567 | 2.0808 | 4.0547 |
| t64_68 | 0.4827 | 0.7090 | 0.7999 | 0.7103 | 1.6336 | 4.1086 | 1.9043 | 4.0938 |
| t68_72 | 0.4353 | 1.0069 | 0.8612 | 0.7307 | 1.6281 | 4.1217 | 1.8520 | 4.2000 |
| t72_76 | 0.4507 | 0.6810 | 0.7831 | 0.7215 | 1.5497 | 4.2780 | 1.7216 | 3.9971 |
| t76_80 | 0.4005 | 1.0199 | 0.6924 | 0.7633 | 1.4820 | 4.0797 | 1.7269 | 3.8454 |
| t80_84 | 0.4111 | 1.1342 | 0.7065 | 0.7281 | 1.4627 | 4.0517 | 1.6240 | 4.0374 |
| t84_88 | 0.4143 | 0.9928 | 0.7485 | 0.7748 | 1.5172 | 4.1316 | 1.5443 | 3.8816 |
| t88_92 | 0.3571 | 1.0607 | 0.7093 | 0.7574 | 1.3979 | 4.0209 | 1.5153 | 3.9585 |
| t92_96 | 0.3786 | 0.6058 | 0.6606 | 0.7850 | 1.4374 | 3.9596 | 1.4693 | 4.4382 |
| t96_100 | 0.3615 | 0.5793 | 0.6965 | 0.7556 | 1.4785 | 3.7747 | 1.4930 | 3.9232 |
| t100_104 | 0.3745 | 1.0180 | 0.5564 | 0.6890 | 1.4789 | 3.9796 | 1.5269 | 3.7727 |
| t104_108 | 0.3978 | 0.6004 | 0.6144 | 0.6550 | 1.3261 | 3.8868 | 1.4708 | 3.8154 |
| t108_112 | 0.3186 | 0.5802 | 0.5574 | 0.7575 | 1.3269 | 3.8536 | 1.4120 | 3.8314 |
| t112_116 | 0.3449 | 0.5704 | 0.5293 | 0.6879 | 1.3776 | 3.9467 | 1.4014 | 3.8737 |
| t116_120 | 0.3693 | 0.4368 | 0.5496 | 0.6139 | 1.2398 | 3.6757 | 1.3855 | 3.9346 |
| t120_124 | 0.3945 | 0.5255 | 0.5097 | 0.5755 | 1.2820 | 4.0256 | 1.3738 | 3.7758 |
| t124_128 | 0.3560 | 0.4883 | 0.4387 | 0.5545 | 1.2646 | 4.0464 | 1.3269 | 3.7377 |
| t128_132 | 0.3653 | 0.4782 | 0.4694 | 0.4793 | 1.2250 | 3.9408 | 1.3415 | 3.6753 |
| t132_126 | 0.3635 | 0.4588 | 0.4331 | 0.5382 | 1.3043 | 3.8974 | 1.3300 | 3.7904 |
| t136_140 | 0.3501 | 0.4841 | 0.4649 | 0.5483 | 1.1997 | 3.6914 | 1.2986 | 3.4466 |
| t140_144 | 0.3320 | 0.5099 | 0.4552 | 0.5454 | 1.1786 | 3.5163 | 1.3170 | 3.8076 |
| t144_148 | 0.4108 | 0.4799 | 0.4236 | 0.5050 | 1.2020 | 3.4033 | 1.2763 | 3.6854 |
| Avg | 0.6744 | 0.9306 | 0.9306 | 0.9441 | 1.8366 | 4.1984 | 2.1398 | 4.1679 |

Table 24: Number of flow vectors for dataset 3 with $\Delta = 4$

| Number of flow vectors | | | | |
|---|---|---|---|---|
| Seq. | cam1 | cam2 | cam3 | cam4 |
| t0_4 | 126 | 104 | 141 | 94 |
| t4_8 | 97 | 80 | 119 | 80 |
| t8_12 | 84 | 60 | 98 | 62 |
| t12_16 | 90 | 58 | 94 | 62 |
| t16_20 | 86 | 54 | 91 | 55 |
| t20_24 | 98 | 78 | 104 | 77 |
| t24_28 | 105 | 91 | 102 | 85 |
| t28_32 | 101 | 85 | 111 | 92 |
| t32_36 | 107 | 94 | 114 | 92 |
| t36_40 | 110 | 90 | 106 | 94 |
| t40_44 | 103 | 94 | 111 | 91 |
| t44_48 | 108 | 88 | 105 | 93 |
| t48_52 | 102 | 86 | 103 | 92 |
| t52_56 | 99 | 85 | 102 | 90 |
| t56_60 | 102 | 94 | 101 | 88 |
| t60_64 | 96 | 88 | 101 | 92 |
| t64_68 | 95 | 84 | 97 | 90 |
| t68_72 | 96 | 92 | 95 | 92 |
| t72_76 | 93 | 91 | 90 | 90 |
| t76_80 | 96 | 89 | 98 | 95 |
| t80_84 | 102 | 85 | 96 | 89 |
| t84_88 | 99 | 78 | 100 | 97 |
| t88_92 | 93 | 84 | 95 | 88 |
| t92_96 | 93 | 84 | 92 | 85 |
| t96_100 | 89 | 83 | 89 | 81 |
| t100_104 | 88 | 82 | 96 | 87 |
| t104_108 | 88 | 81 | 92 | 87 |
| t108_112 | 100 | 82 | 90 | 79 |
| t112_116 | 94 | 78 | 91 | 80 |
| t116_120 | 90 | 79 | 91 | 84 |
| t120_124 | 94 | 73 | 92 | 79 |
| t124_128 | 90 | 76 | 84 | 88 |
| t128_132 | 86 | 72 | 86 | 81 |
| t132_126 | 86 | 82 | 91 | 84 |
| t136_140 | 86 | 73 | 94 | 82 |
| t140_144 | 89 | 77 | 91 | 80 |
| t144_148 | 85 | 76 | 87 | 84 |