# **QEKF**

KITTI

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| --- | --- | --- | --- | --- | --- |
|  | **EightPt** | **Nister** | **Kukelova** | **QuEst** | **VEst** |
| **T err mean** | 0.0492 | 0.1345 | 0.1495 | 0.0613 | 0.0382 |
| **T err std** | 0.0484 | 0.1163 | 0.1391 | 0.0656 | 0.0411 |
| **T err med** | 0.0145 | 0.0492 | 0.0535 | 0.0118 | 0.0099 |
| **T err Q1** | 0.0108 | 0.0405 | 0.0326 | 0.0073 | 0.0064 |
| **T err Q3** | 0.0950 | 0.2605 | 0.3001 | 0.1346 | 0.0733 |
| **Q err mean** | 0.0636 | 0.0060 | 0.0139 | 0.0032 | 0.0058 |
| **Q err std** | 0.0912 | 0.0069 | 0.0181 | 0.0031 | 0.0078 |
| **Q err med** | 0.0029 | 0.0020 | 0.0021 | 0.0013 | 0.0015 |
| **Q err Q1** | 0.0022 | 0.0009 | 0.0008 | 0.0007 | 0.0009 |
| **Q err Q3** | 0.1153 | 0.0104 | 0.0260 | 0.0059 | 0.0091 |

# **VEst**

Since VEst outputs V and W, we compute the integral of the two and compute the error with respect to the ground truth for each frame.

KITTI

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|  | **VEst** |
| **T err mean** | 0.5672 |
| **T err std** | 0.4587 |
| **T err med** | 0.8913 |
| **T err Q1** | 0.0083 |
| **T err Q3** | 0.9521 |
| **Q err mean** | 0.0058 |
| **Q err std** | 0.0078 |
| **Q err med** | 0.0015 |
| **Q err Q1** | 0.0009 |
| **Q err Q3** | 0.0091 |

# **QEKF**

KITTI

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| --- | --- | --- | --- | --- | --- |
|  | **EightPt** | **Nister** | **Kukelova** | **QuEst** | **VEst** |
| **GT-X T err mean** | 0.0594 | 0.1444 | 0.1947 | 0.0785 | 0.0458 |
| **GT-X T err std** | 0.0616 | 0.1296 | 0.1609 | 0.0860 | 0.0436 |
| **GT-X T err med** | 0.0195 | 0.0492 | 0.1726 | 0.0134 | 0.0197 |
| **GT-X T err Q1** | 0.0104 | 0.0385 | 0.0225 | 0.0072 | 0.0093 |
| **GT-X T err Q3** | 0.1111 | 0.2719 | 0.3666 | 0.1771 | 0.0887 |
| **GT-X Q err mean** | 0.3334 | 0.3334 | 0.3334 | 0.3334 | 0.3334 |
| **GT-X Q err std** | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| **GT-X Q err med** | 0.3335 | 0.3335 | 0.3335 | 0.3335 | 0.3335 |
| **GT-X Q err Q1** | 0.3326 | 0.3326 | 0.3326 | 0.3326 | 0.3326 |
| **GT-X Q err Q3** | 0.3341 | 0.3341 | 0.3341 | 0.3341 | 0.3341 |
| **GT-X V err mean** | 0.5634 | 0.5798 | 0.5846 | 0.5517 | 0.5586 |
| **GT-X V err std** | 0.4501 | 0.4137 | 0.3786 | 0.4437 | 0.4506 |
| **GT-X V err med** | 0.8535 | 0.8706 | 0.8348 | 0.8523 | 0.8852 |
| **GT-X V err Q1** | 0.0204 | 0.1048 | 0.1982 | 0.0128 | 0.0100 |
| **GT-X V err Q3** | 0.9541 | 0.9150 | 0.8974 | 0.9421 | 0.9303 |
| **Z-X T L1 mean** | 0.4606 | 1.0581 | 1.3635 | 0.5910 | 0.4025 |
| **Z-X T L1 std** | 0.3965 | 0.8347 | 0.5471 | 0.4974 | 0.3322 |
| **Z-X T L1 med** | 0.3204 | 0.8213 | 1.3703 | 0.6247 | 0.2590 |
| **Z-X T L1 Q1** | 0.0711 | 0.2621 | 0.9690 | 0.0333 | 0.1857 |
| **Z-X T L1 Q3** | 0.8714 | 1.9459 | 1.7082 | 1.0772 | 0.6076 |
| **Z-X Q L1 mean** | 1.1693 | 1.0330 | 1.0719 | 1.0158 | 1.0222 |
| **Z-X Q L1 std** | 0.2295 | 0.0357 | 0.0918 | 0.0137 | 0.0297 |
| **Z-X Q L1 med** | 1.0152 | 1.0108 | 1.0108 | 1.0070 | 1.0046 |
| **Z-X Q L1 Q1** | 1.0107 | 1.0056 | 1.0054 | 1.0051 | 1.0034 |
| **Z-X Q L1 Q3** | 1.3101 | 1.0591 | 1.1331 | 1.0268 | 1.0357 |
| **Z-X V L1 mean** | 0.0488 | 0.0632 | 0.0590 | 0.0520 | 0.0516 |
| **Z-X V L1 std** | 0.0417 | 0.0555 | 0.0575 | 0.0424 | 0.0421 |
| **Z-X V L1 med** | 0.0243 | 0.0480 | 0.0305 | 0.0243 | 0.0289 |
| **Z-X V L1 Q1** | 0.0211 | 0.0238 | 0.0229 | 0.0214 | 0.0229 |
| **Z-X V L1 Q3** | 0.0697 | 0.0821 | 0.0798 | 0.0809 | 0.0734 |
| **Z-X T L2 mean** | 0.3338 | 0.7324 | 1.3257 | 0.3978 | 0.2525 |
| **Z-X T L2 std** | 0.3969 | 0.7806 | 0.9242 | 0.4305 | 0.3772 |
| **Z-X T L2 med** | 0.0844 | 0.3607 | 1.1590 | 0.1548 | 0.0566 |
| **Z-X T L2 Q1** | 0.0022 | 0.0280 | 0.8175 | 0.0005 | 0.0358 |
| **Z-X T L2 Q3** | 0.6853 | 1.4451 | 1.6334 | 0.8748 | 0.3684 |
| **Z-X Q L2 mean** | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| **Z-X Q L2 std** | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Z-X Q L2 med** | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| **Z-X Q L2 Q1** | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| **Z-X Q L2 Q3** | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| **Z-X V L2 mean** | 0.0033 | 0.0044 | 0.0039 | 0.0034 | 0.0034 |
| **Z-X V L2 std** | 0.0054 | 0.0068 | 0.0065 | 0.0053 | 0.0053 |
| **Z-X V L2 med** | 0.0005 | 0.0014 | 0.0005 | 0.0005 | 0.0005 |
| **Z-X V L2 Q1** | 0.0003 | 0.0005 | 0.0004 | 0.0003 | 0.0004 |
| **Z-X V L2 Q3** | 0.0046 | 0.0057 | 0.0050 | 0.0050 | 0.0048 |