Calibration results
==========
Camera-system parameters:
cam0 (/prophesee/left/events):
type: <class 'aslam_cv.libaslam_cv_python.DistortedPinholeCameraGeometry'>
distortion: [-0.04860995 0.08004534 -0.00005034 -0.00010072] +- [0.00106841 0.00239458 0.00007804 0.00005199]
projection: [1031.84451295 1031.07421131 636.89695402 362.74148482] +- [0.14406429 0.15512262 0.0045717
0.09905534]
reprojection error: [0.000040, -0.000107] +- [0.652671, 0.591296]

cam1 (/prophesee/right/events):
type: <class 'aslam_cv.libaslam_cv_python.DistortedPinholeCameraGeometry'>
distortion: [-0.05384812 0.08104977 0.0015166   0.00078297] +- [0.00104254 0.00235111 0.00007774 0.00005059]
projection: [1031.8604987 1031.51113092 638.91854477 366.18081054] +- [0.14042292 0.15252699 0.00553696
0.09481518]
reprojection error: [0.000100, -0.000105] +- [0.683031, 0.663402]

cam2 (/ovc/left/image_mono/compressed):
type: <class 'aslam_cv.libaslam_cv_python.DistortedPinholeCameraGeometry'>
distortion: [-0.39620703 0.16260595 0.00009033 0.0003219] +- [0.00053088 0.00096688 0.00005213 0.00003173]
projection: [1058.13242746 1058.18061626 677.15051536 335.46177943] +- [0.1273649 0.13151388 0.01810562
0.23192719]
reprojection error: [0.000199, -0.000101] +- [0.197912, 0.173553]

cam3 (/ovc/right/image_mono/compressed):
type: <class 'aslam_cv.libaslam_cv_python.DistortedPinholeCameraGeometry'>
distortion: [-0.39461591 0.15610626 0.00005469 0.00081943] +- [0.00043731 0.00072337 0.00005151 0.00003168]
projection: [1053.13361927 1053.36425791 673.52095113 327.53937618] +- [0.12273198 0.12662385 0.00784866
0.22194676]
reprojection error: [0.000270, -0.000064] +- [0.226174, 0.192397]

cam4 (/ovc/rgb/image_color/compressed):
type: <class 'aslam_cv.libaslam_cv_python.DistortedPinholeCameraGeometry'>
distortion: [-0.41722472 0.19134924 0.00005799 -0.00024211] +- [0.00079366 0.00209397 0.00005143 0.00003485]
projection: [1264.25045426 1264.06024062 655.25217949 367.25081746] +- [0.12900376 0.13022731 0.0052327
0.11600453]
reprojection error: [0.000162, -0.000156] +- [0.202585, 0.176507]

baseline T_1_0:
q: [-0.0004853   0.00171304 -0.00034036 0.99999836] +- [0.00010037 0.00004938 0.00004324]

t: [-0.12012439 0.00086338 -0.00006289] +- [0.00002573 0.00002742 0.00009771]

baseline T_2_1:
q: [0.00020446 -0.0035016 -0.00482936 0.99998219] +- [0.0002698 0.00004897 0.00003999]
t: [0.1200365 0.069241   0.00406139] +- [0.00002329 0.00002454 0.0000922]

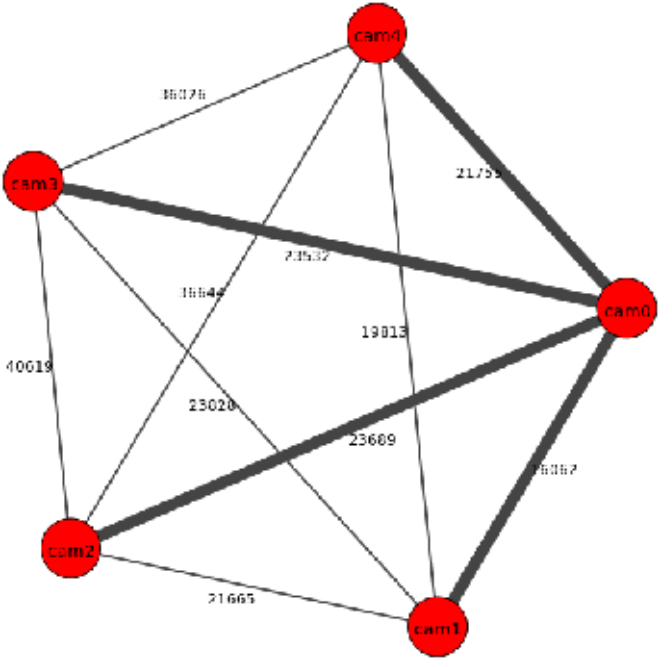
baseline T_3_2:
q: [0.00016655 -0.00054577 0.00031339 0.99999979] +- [0.00031501 0.00004634 0.00003342]
t: [-0.11998254 -0.0000887   0.0006172] +- [0.00002085 0.00002063 0.00008459]

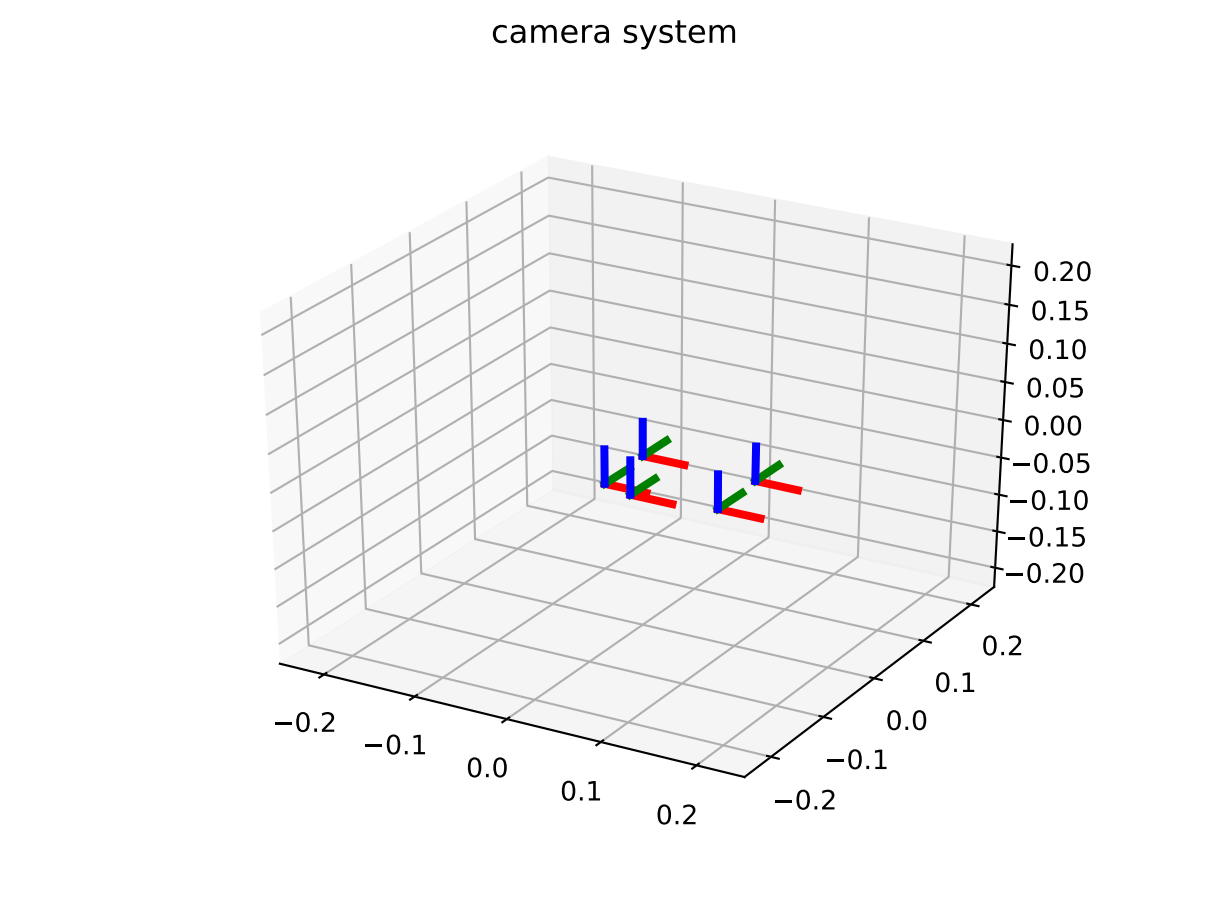
baseline T_4_3:
q: [0.00162431 0.00267377 0.0003354 0.99999505] +- [0.00027008 0.00003564 0.00003169]
t: [0.08883362 0.00618312 0.00289253] +- [0.00001914 0.00001923 0.00008025]

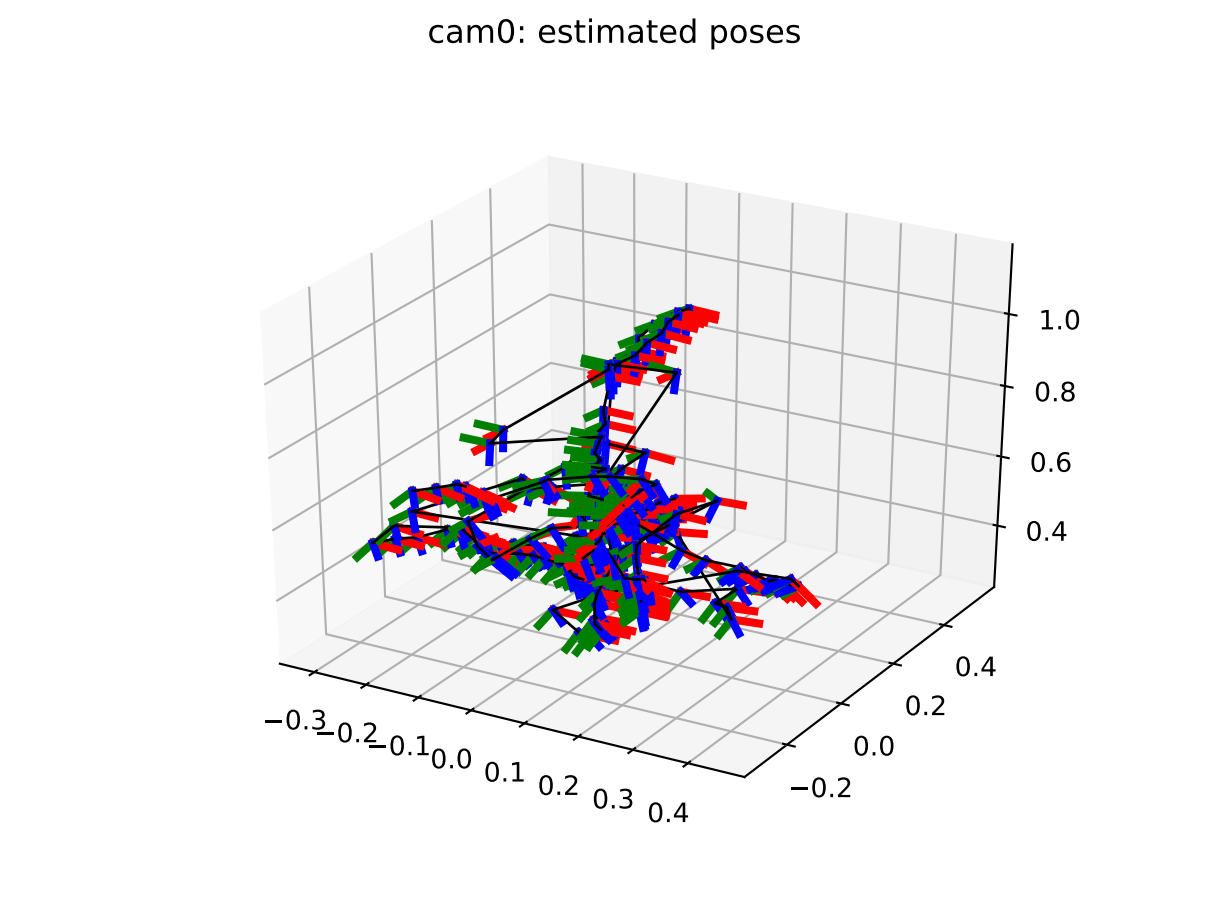
Target configuration
====================

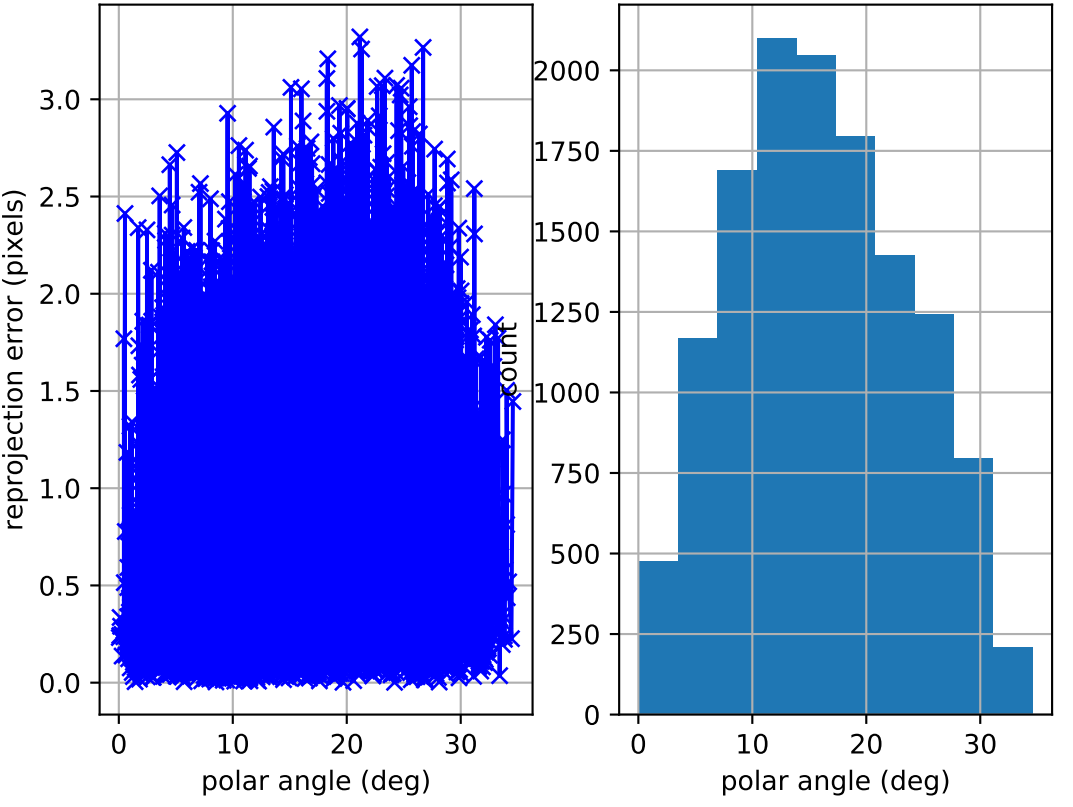
Type: aprilgrid
Tags:
Rows: 5
Cols: 7
Size: 0.04 [m]
Spacing 0.01 [m]

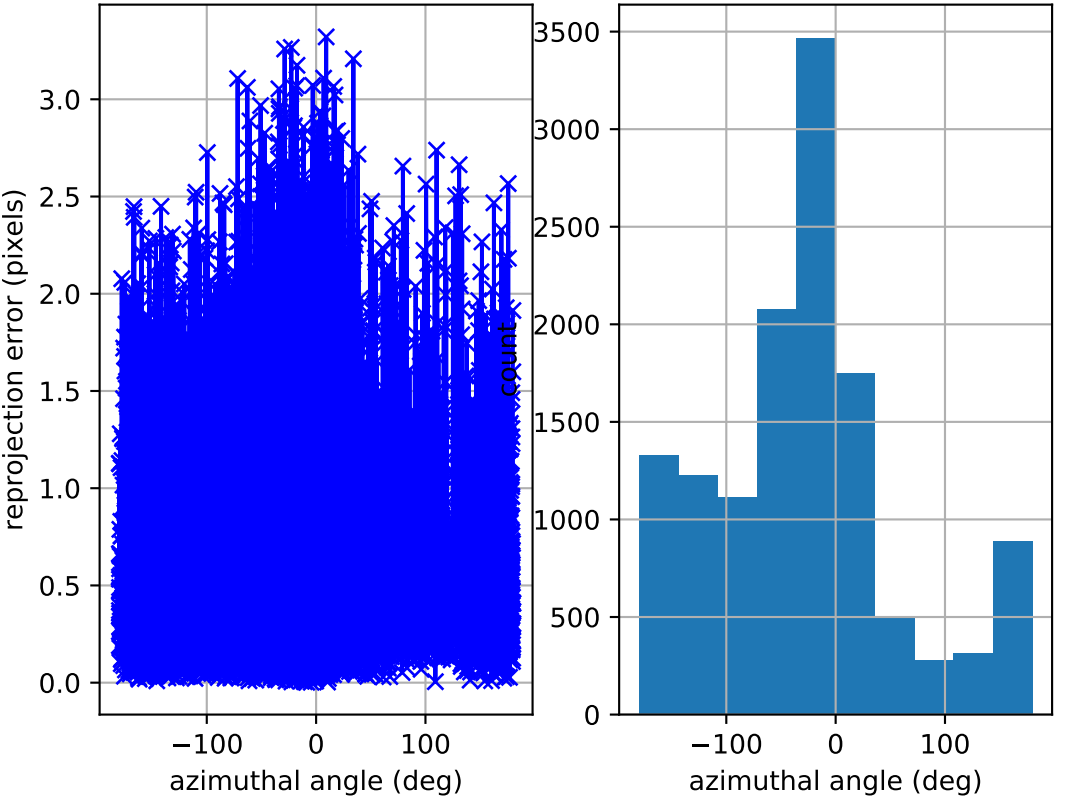
Inter-camera observations graph (edge weight=#mutual obs.)

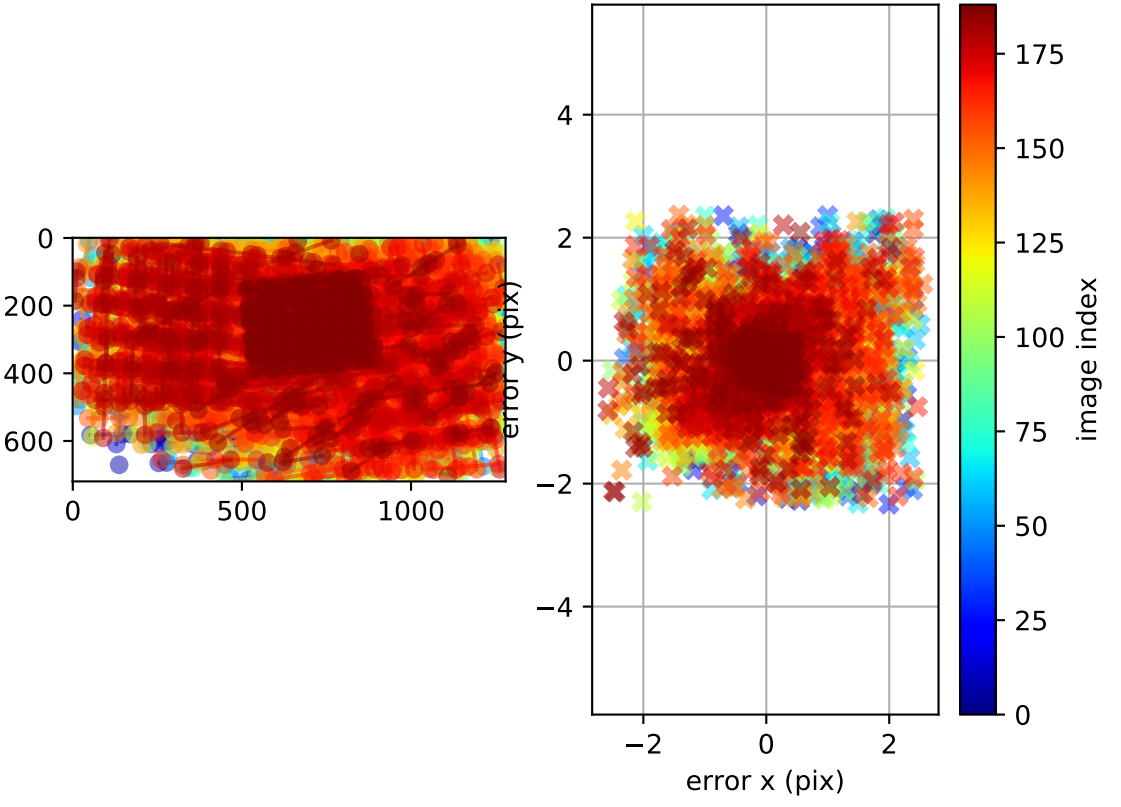


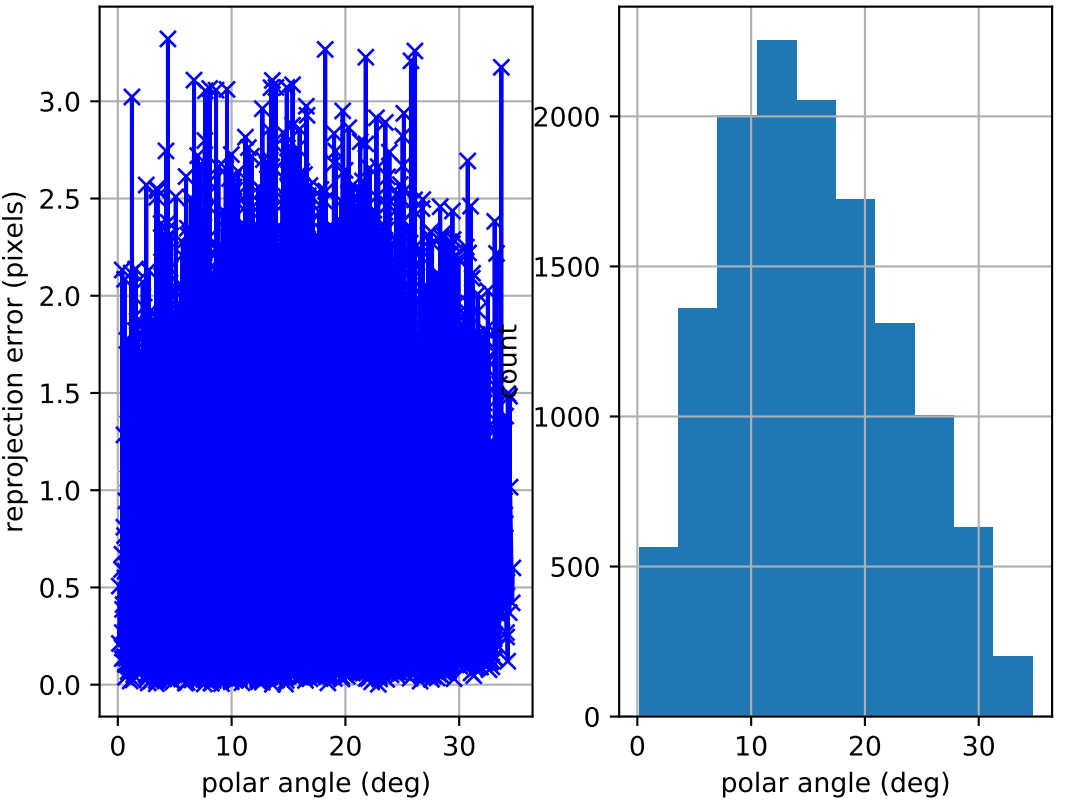

camera system
0.20
0.15
0.10
0.05
0.00
−0.05
−0.10
−0.15
−0.20
−0.2
−0.1
0.0
0.1
0.2
0.2
0.1
0.0
−0.1
−0.2

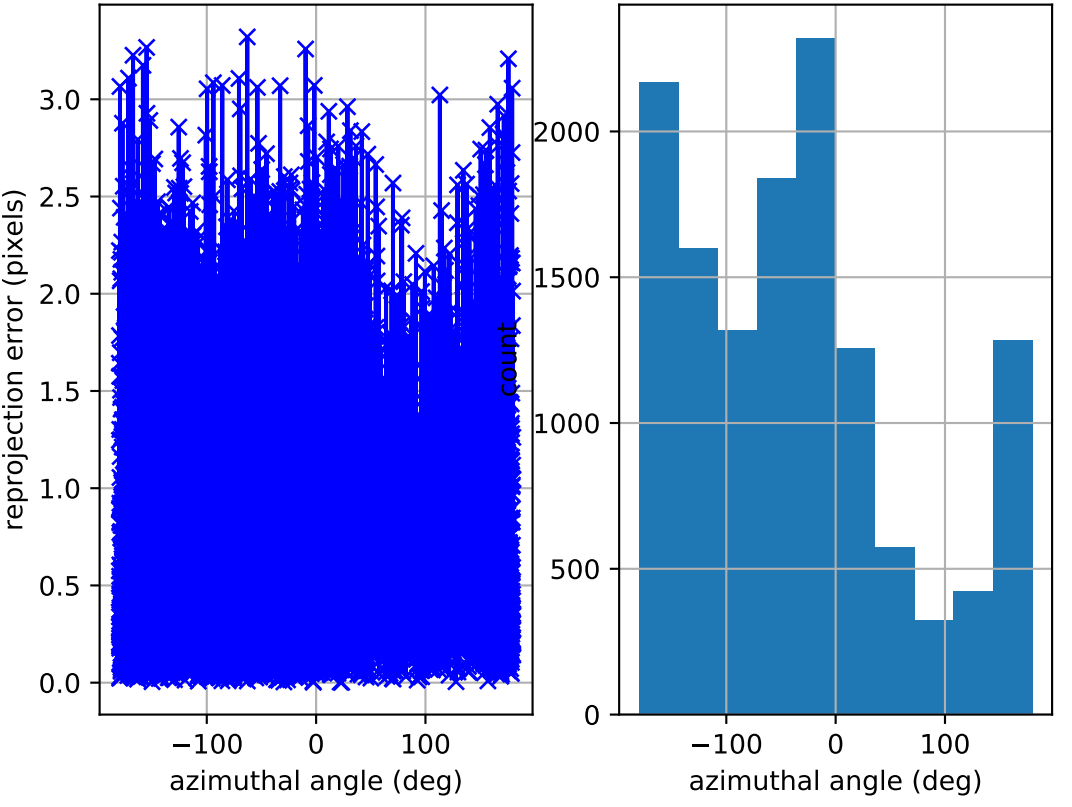

cam0: estimated poses
1.0
0.8
0.6
0.4
0.4
0.2
0.0
−0.2
−0.3
−0.2
−0.1
0.0
0.1
0.2
0.3
0.4

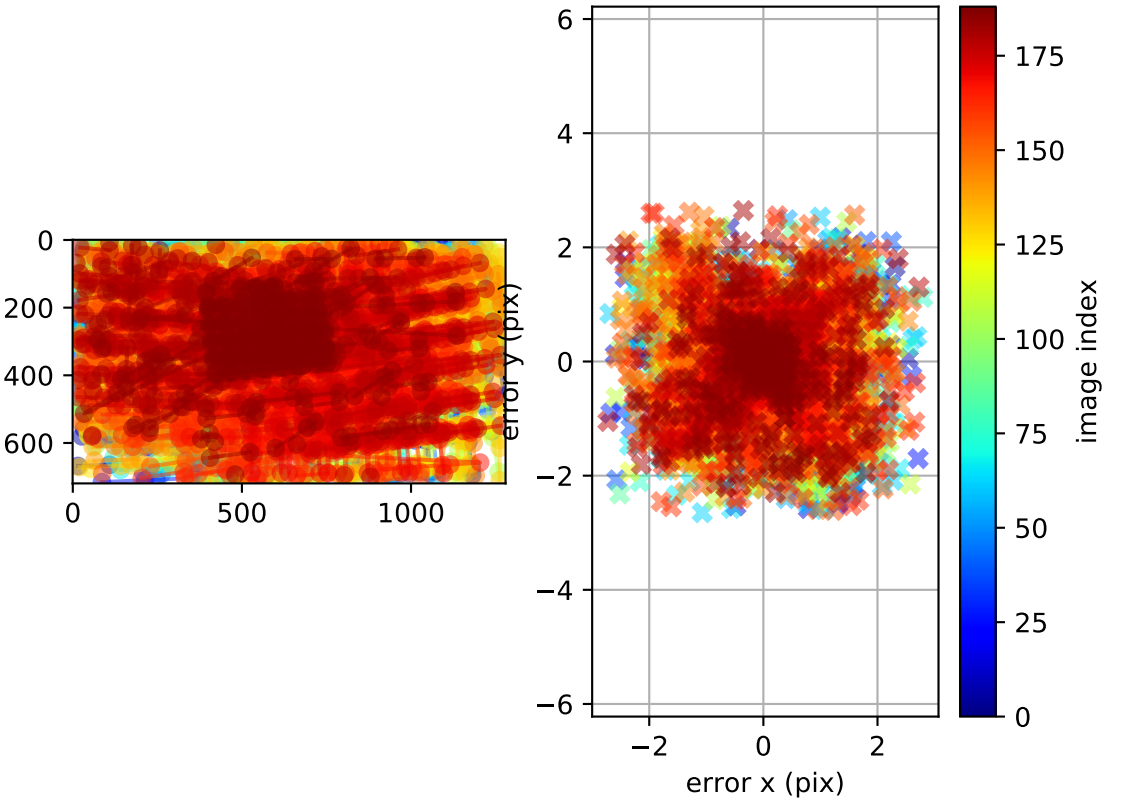

cam0: polar error
reprojection error (pixels)
polar angle (deg)
count
polar angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
250
500
750
1000
1250
1500
1750
2000
0
10
20
30
0
10
20
30

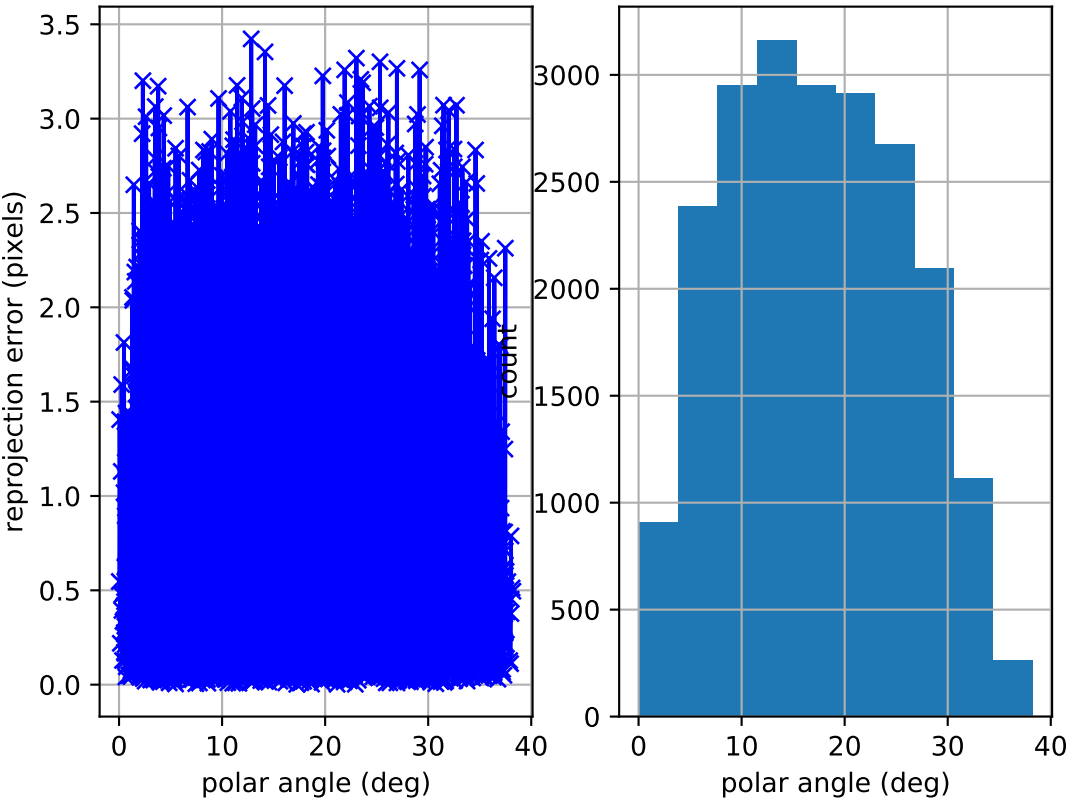

cam0: azimuthal error
reprojection error (pixels)
azimuthal angle (deg)
count
azimuthal angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−100
0
100
0
500
1000
1500
2000
2500
3000
3500

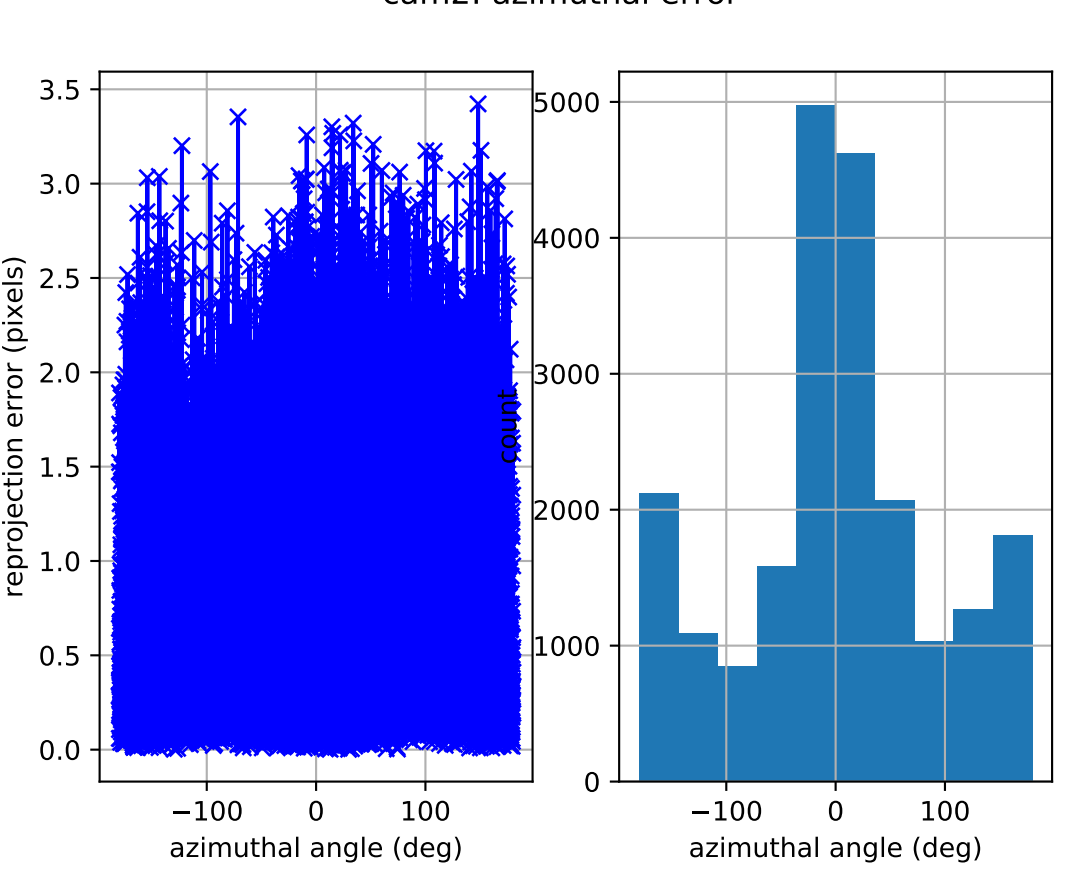

cam0: reprojection errors
0
200
400
600
0
500
1000
error y (pix)
4
2
0
−2
−4
−2
0
2
error x (pix)
175
150
125
100
75
50
25
0
image index

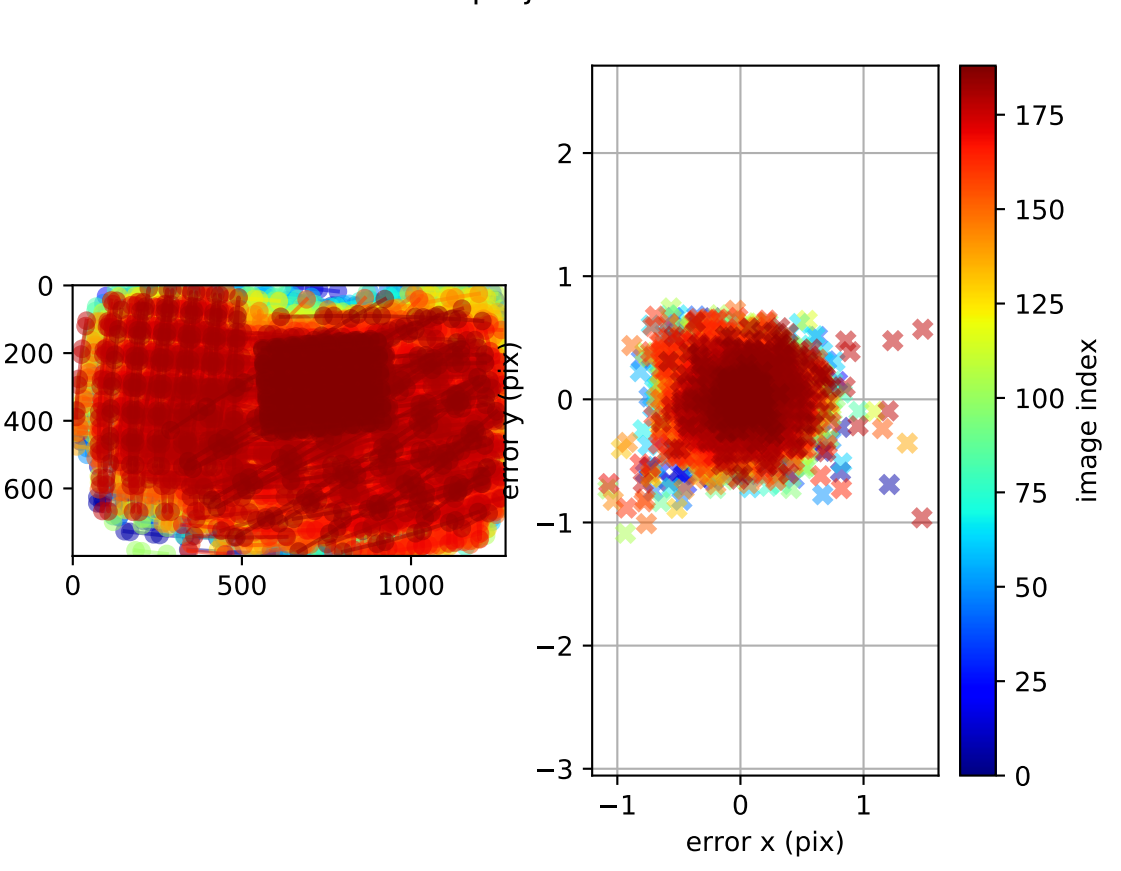

cam1: polar error
reprojection error (pixels)
polar angle (deg)
count
polar angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
10
20
30
0
500
1000
1500
2000

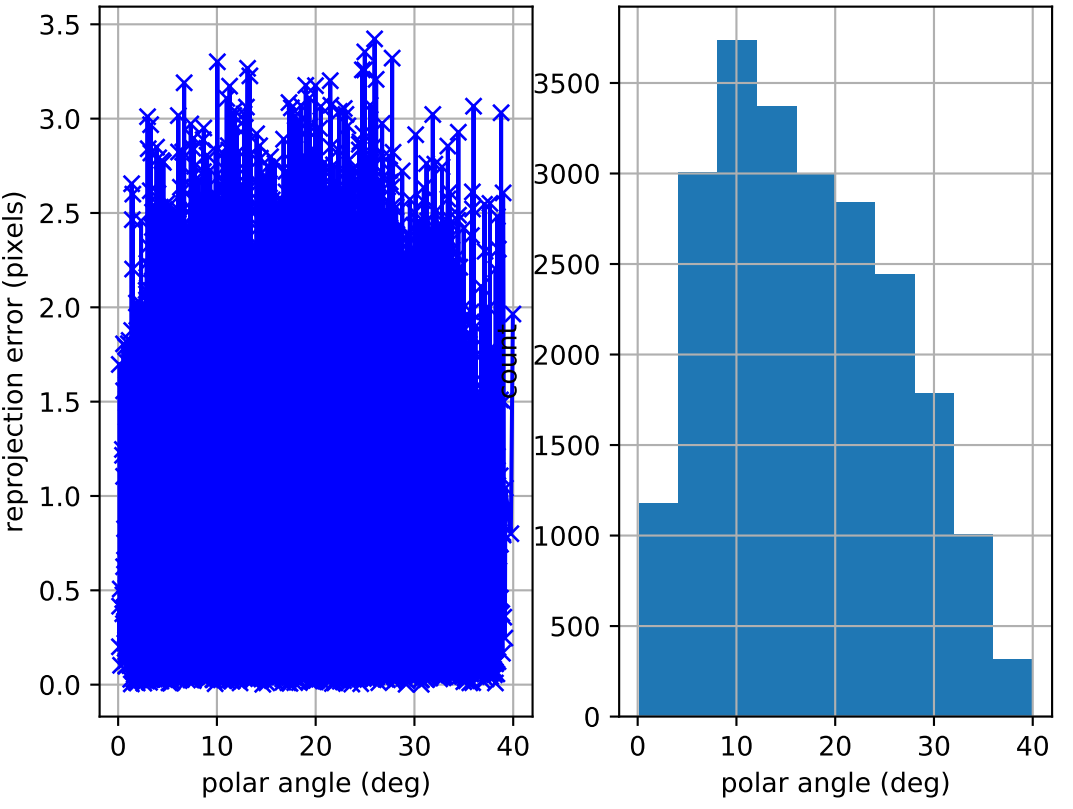

cam1: azimuthal error
reprojection error (pixels)
azimuthal angle (deg)
count
azimuthal angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−100
0
100
0
500
1000
1500
2000

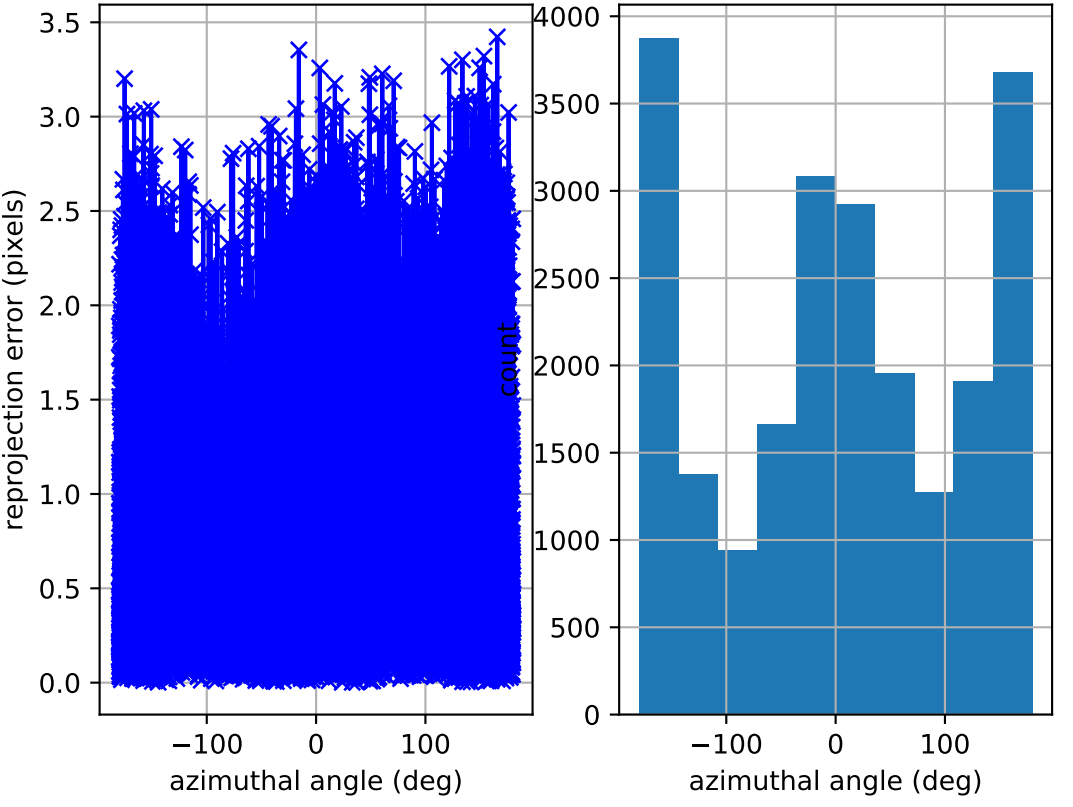

cam1: reprojection errors
0
200
400
600
0
500
1000
error y (pix)
6
4
2
0
−2
−4
−6
−2
0
2
error x (pix)
175
150
125
100
75
50
25
0
image index

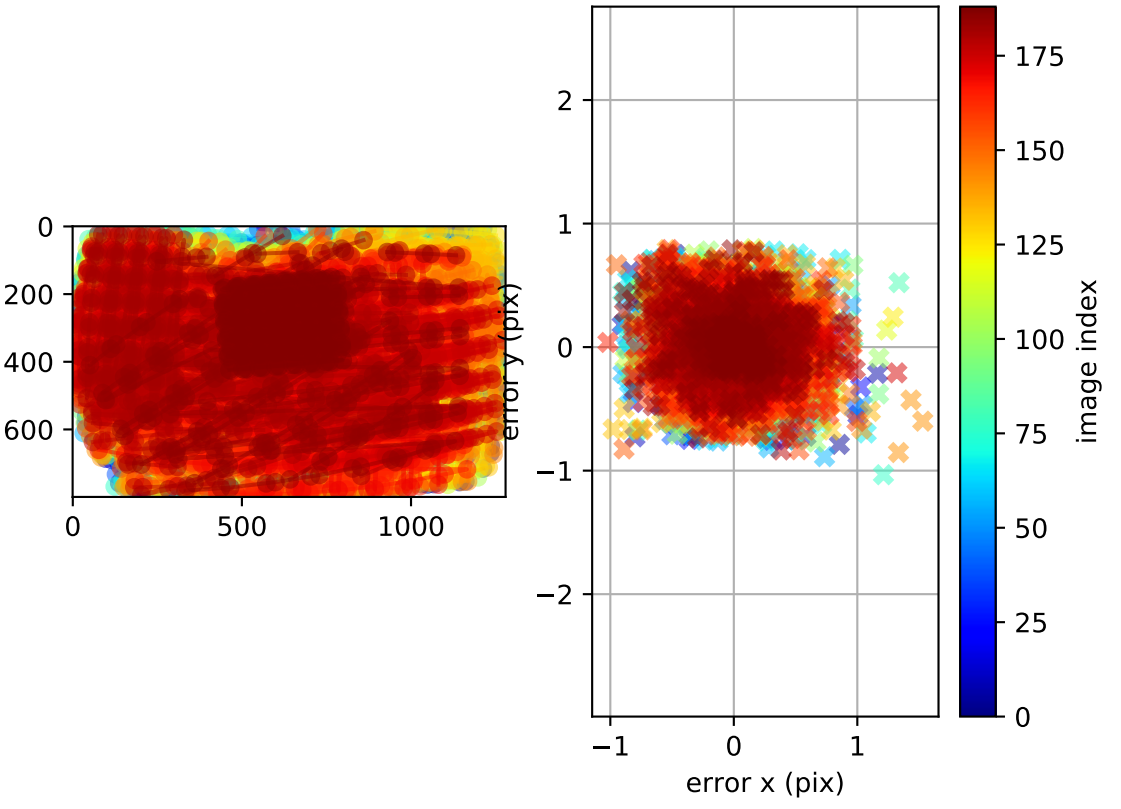

cam2: polar error
reprojection error (pixels)
polar angle (deg)
count
polar angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0
10
20
30
40
0
500
1000
1500
2000
2500
3000

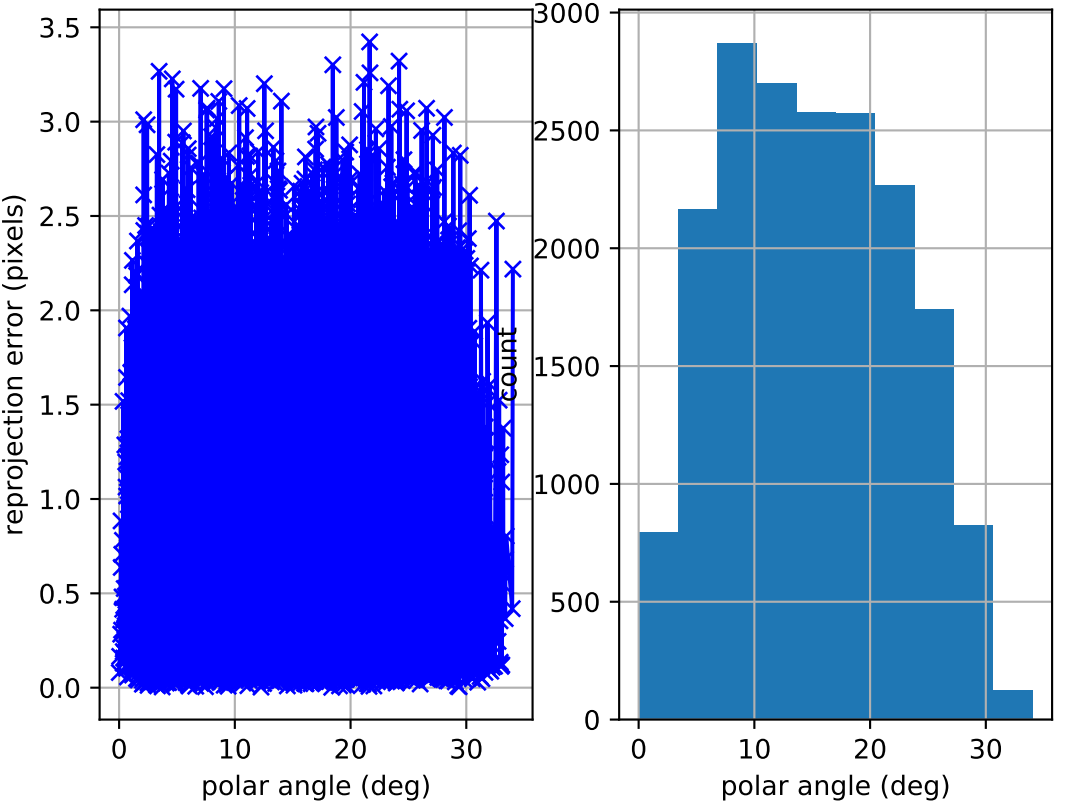

cam2: azimuthal error
reprojection error (pixels)
azimuthal angle (deg)
count
azimuthal angle (deg)

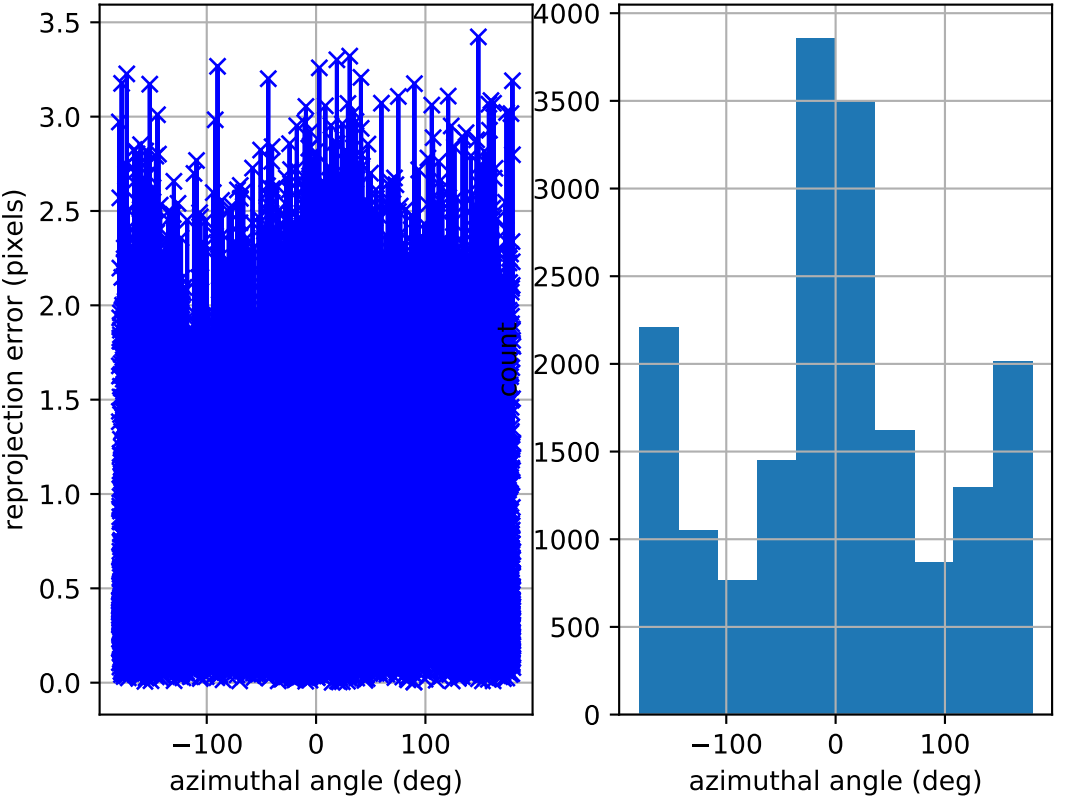

cam2: reprojection errors
0
200
400
600
0
500
1000
error y (pix)
2
1
0
−1
−2
−3
−1
0
1
error x (pix)
175
150
125
100
75
50
25
0
image index

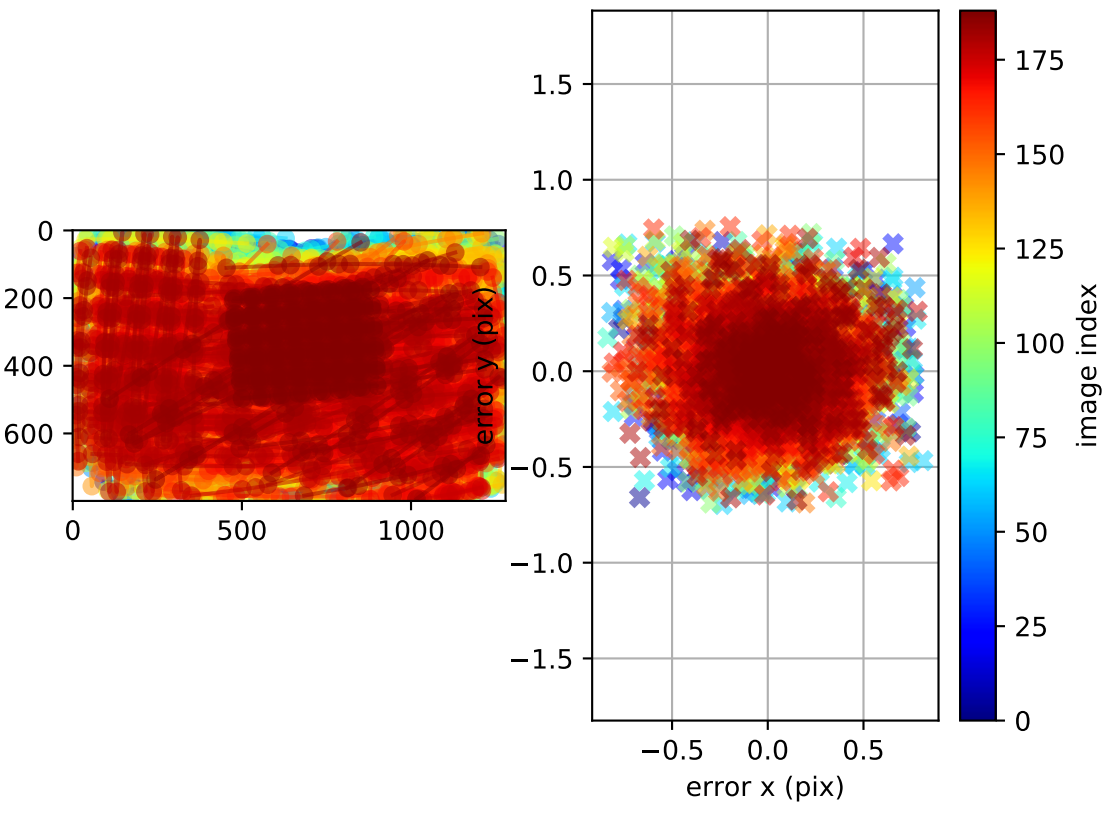

cam3: polar error
reprojection error (pixels)
polar angle (deg)
count
polar angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0
10
20
30
40
0
500
1000
1500
2000
2500
3000
3500

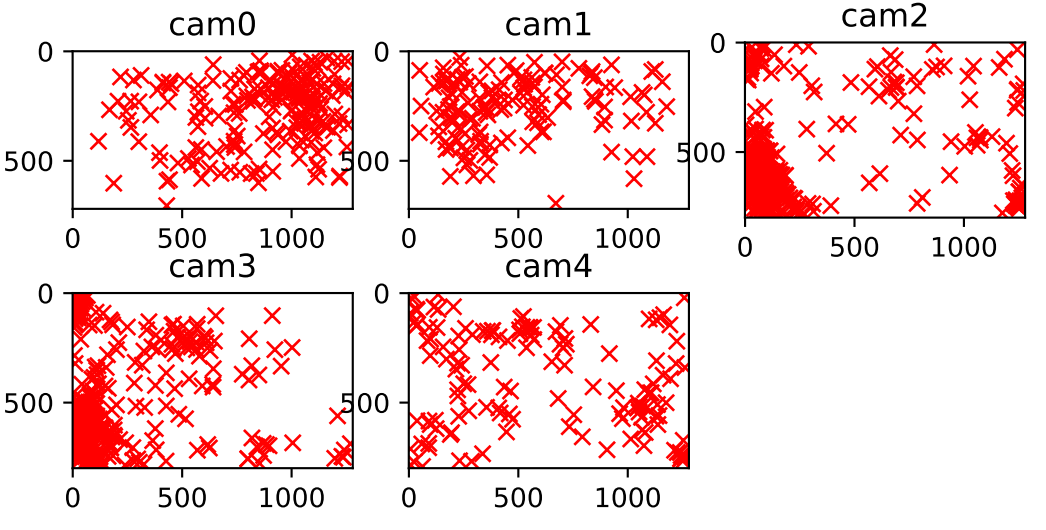

cam3: azimuthal error
reprojection error (pixels)
azimuthal angle (deg)
count
azimuthal angle (deg)


cam3: reprojection errors
0
200
400
600
0
500
1000
error y (pix)
2
1
0
−1
−2
−1
0
1
error x (pix)
175
150
125
100
75
50
25
0
image index


cam4: polar error
reprojection error (pixels)
polar angle (deg)
count
polar angle (deg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0
10
20
30
0
500
1000
1500
2000
2500
3000


cam4: azimuthal error
reprojection error (pixels)
azimuthal angle (deg)
count
azimuthal angle (deg)


cam4: reprojection errors
0
200
400
600
0
500
1000
error y (pix)
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−0.5
0.0
0.5
error x (pix)
175
150
125
100
75
50
25
0
image index


Location of removed outlier corners
cam0
cam1
cam2
cam3
cam4
0
500
1000