

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.4343116606516496, median 0.3943353661189307, std: 0.2520569287275741
Gyroscope error (imu0): mean 1.1915760596653067, median 1.1353993461693777, std: 0.5360616789675762
Accelerometer error (imu0): mean 3.911284259378515, median 3.63815978351216, std: 1.897526501343755

Residuals

Reprojection error (cam0) [px]: mean 0.4343116606516496, median 0.3943353661189307, std: 0.2520569287275741
Gyroscope error (imu0) [rad/s]: mean 0.0007751657911217736, median 0.000738620690868648, std: 0.0003487286204656417
Accelerometer error (imu0) [m/s^2]: mean 0.05531391245909501, median 0.0514513490792326, std: 0.02683507713162707

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[ 0.0033666  0.9999908 -0.00265986  0.18666144]
 [ 0.04384007 0.00250972 0.99903541  0.02363246]
 [ 0.99903289 -0.00347996 -0.04383122  0.01641548]
 [ 0.         0.         0.         1.         ]]
```

T_ic: (cam0 to imu0):

```
[[ 0.0033666  0.04384007 0.99903289 -0.01806407]
 [ 0.9999908  0.00250972 -0.00347996 -0.18666191]
 [-0.00265986 0.99903541 -0.04383122 -0.02239366]
 [ 0.         0.         0.         1.         ]]
```

timeshift cam0 to imu0: [s] ($t_{imu} = t_{cam} + \text{shift}$)

-8.499644640548534e-05

Gravity vector in target coords: [m/s^2]

[-0.20816649 -9.48374087 -2.48671446]

Calibration configuration

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cam0

Camera model: pinhole

Focal length: [1589.4525236092466, 1569.6226583767548]

Principal point: [769.3731045582546, 476.53124250298214]

Distortion model: radtan

Distortion coefficients: [-0.1796161469730297, 0.06234031597330985, 0.010815332916716283,
0.001231958107871975]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.044 [m]

Spacing 0.013199999999999998 [m]

IMU configuration

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IMU0:

Model: calibrated

Update rate: 200.0

Accelerometer:

Noise density: 0.001

Noise density (discrete): 0.01414213562373095

Random walk: 9e-05

Gyroscope:

Noise density: 4.6e-05

Noise density (discrete): 0.0006505382386916237

Random walk: 5.89e-06

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

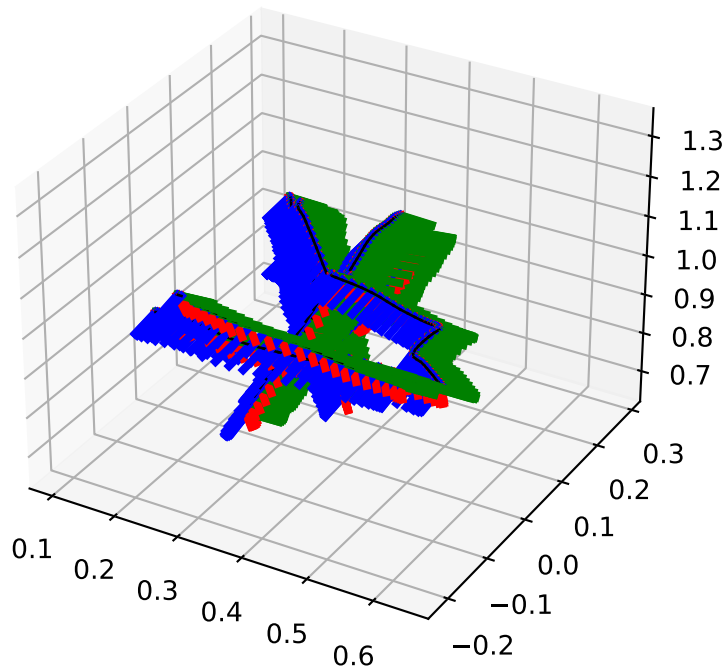
[0. 1. 0. 0.]

[0. 0. 1. 0.]

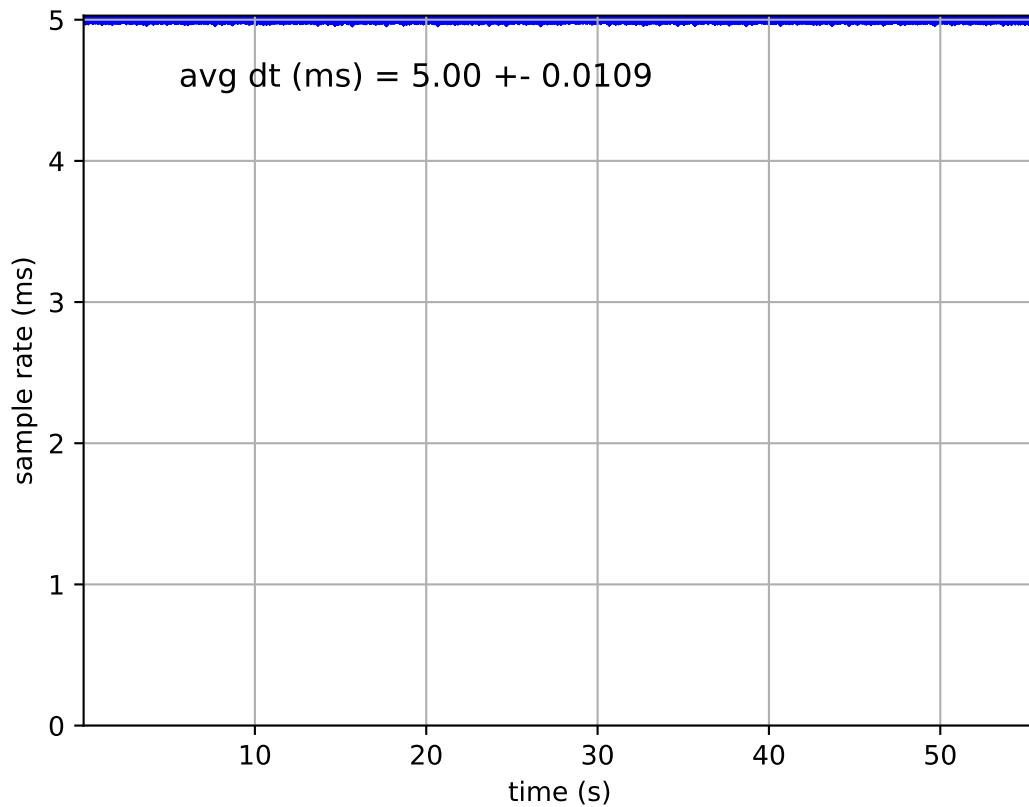
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

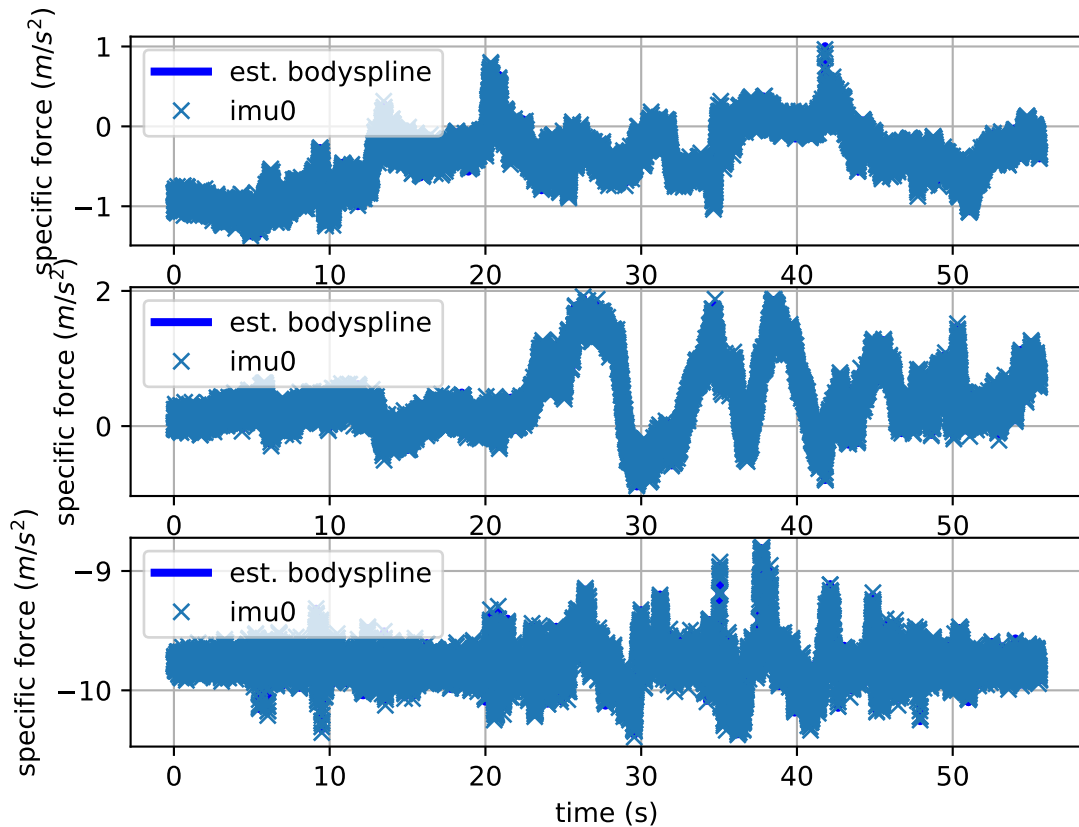
imu0: estimated poses



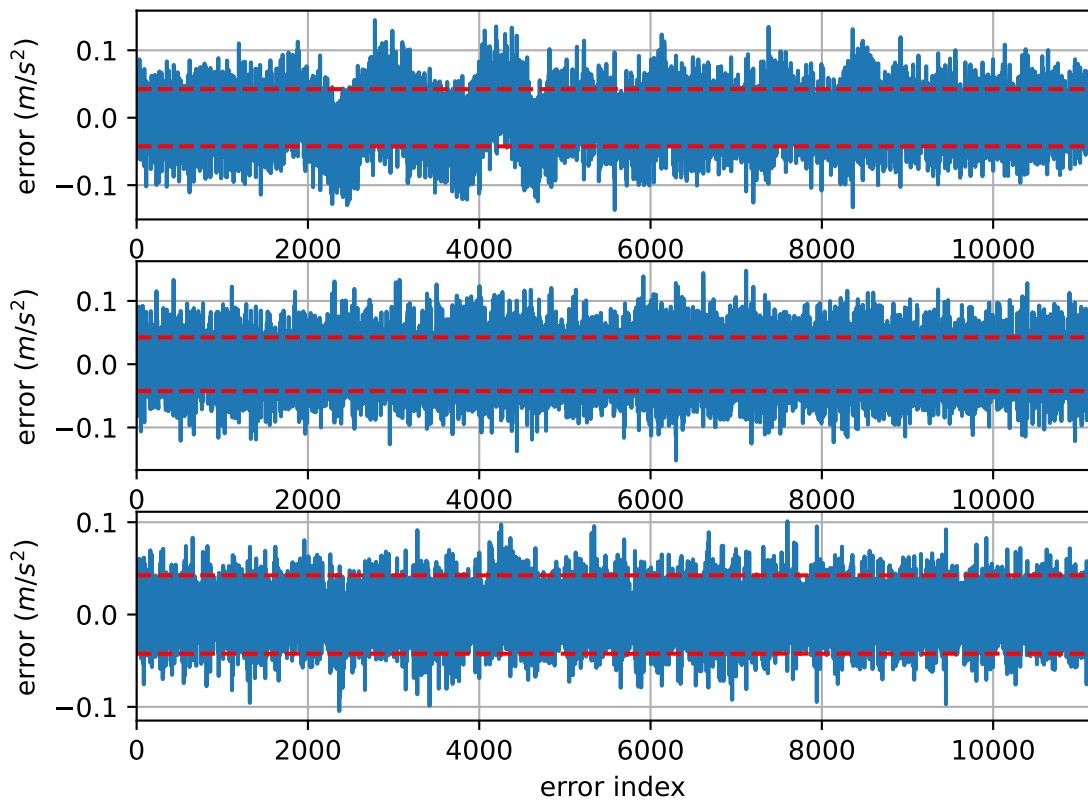
imu0: sample inertial rate



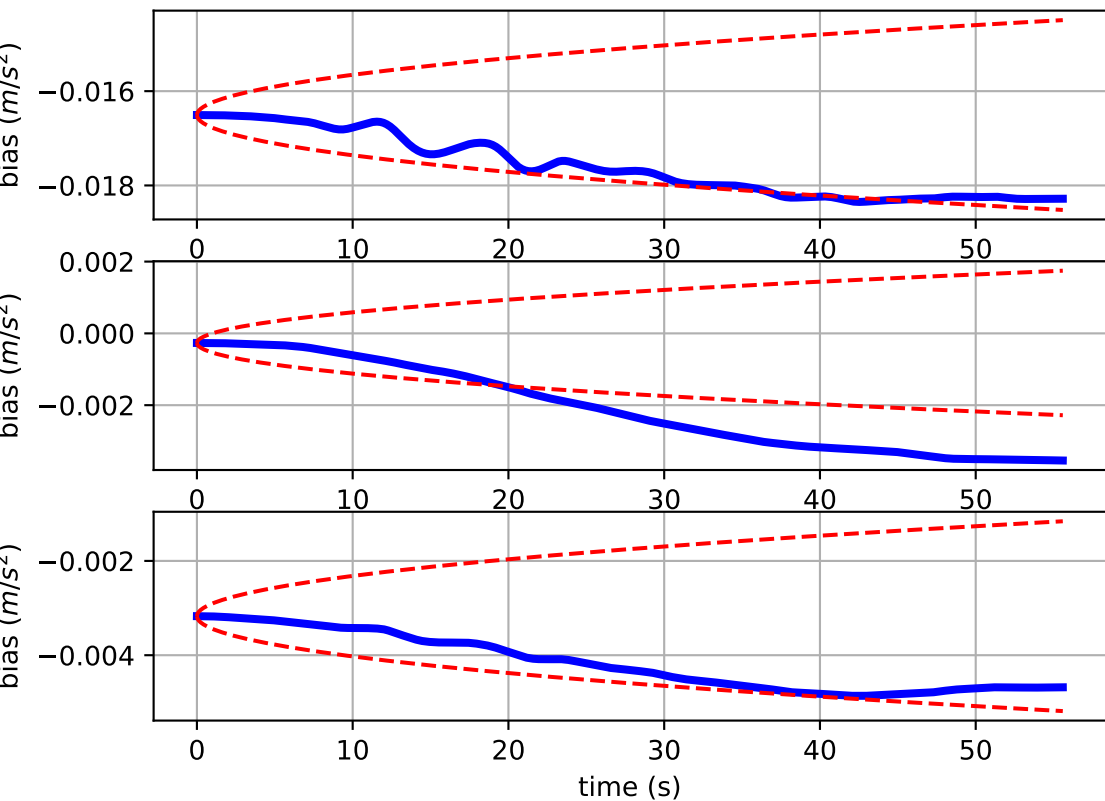
Comparison of predicted and measured specific force (imu0 frame)



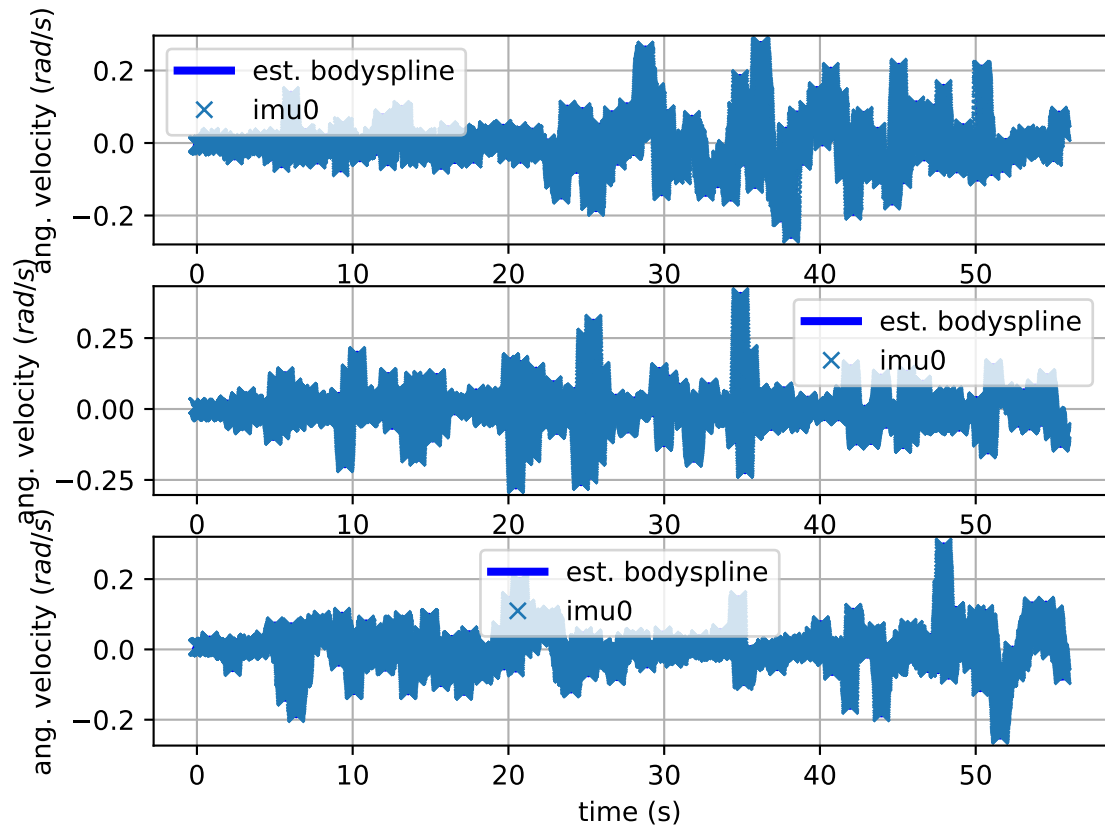
imu0: acceleration error



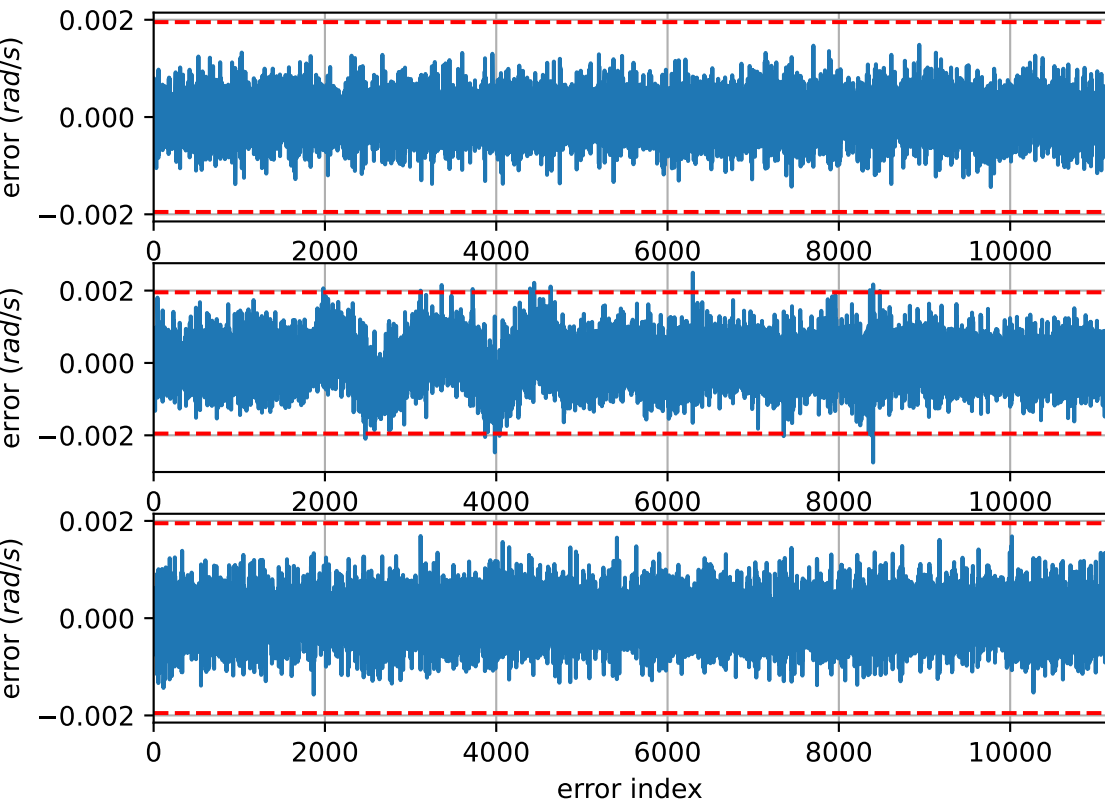
imu0: estimated accelerometer bias (imu frame)



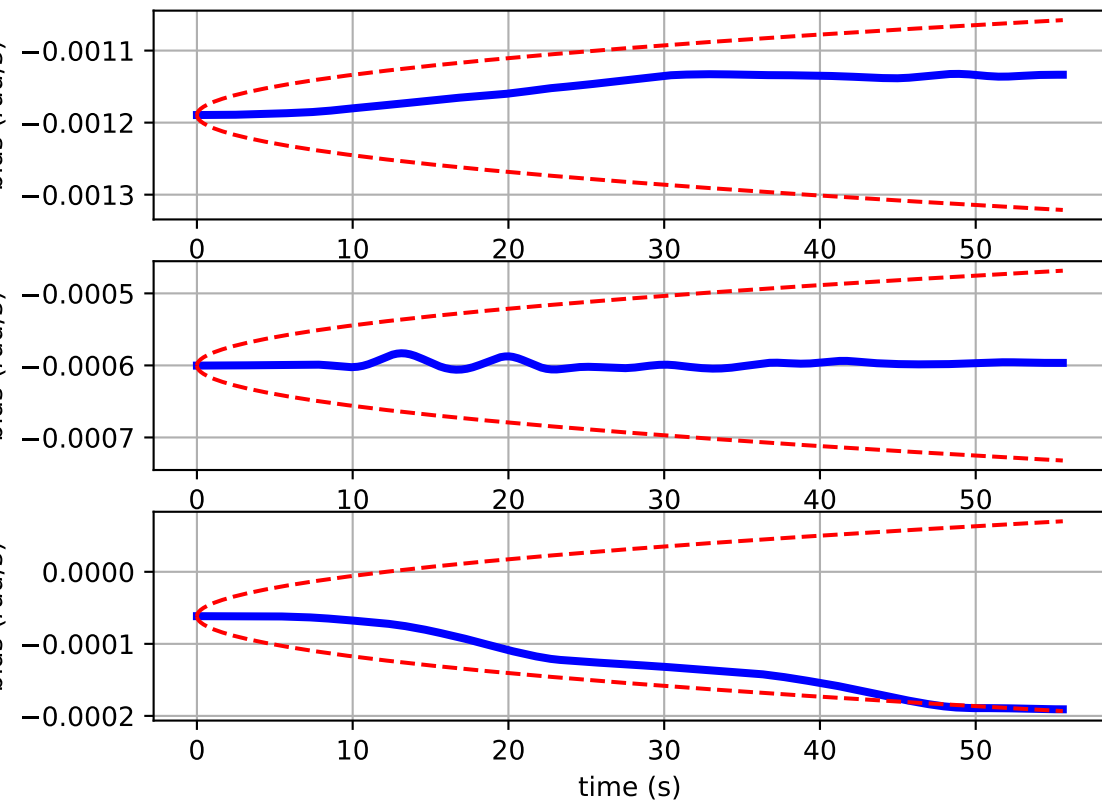
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

