

Calibration results

Normalized Residuals

Reprojection error (cam0): mean 0.08918762562398228, median 0.08379918446615728, std: 0.0469638

Gyroscope error (imu0): mean 0.020534382570847755, median 0.01763769255912176, std: 0.0124060

Accelerometer error (imu0): mean 0.07434703583798018, median 0.06512052888560835, std: 0.0552480

Residuals

Reprojection error (cam0) [px]: mean 0.08918762562398228, median 0.08379918446615728, std: 0.0469

Gyroscope error (imu0) [rad/s]: mean 0.007803065376922143, median 0.0067023231724662674, std: 0.0

Accelerometer error (imu0) [m/s^2]: mean 0.028251873618432462, median 0.024745800976531167, std: 0

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[ 0.99998804 -0.00094243 -0.00479908  0.00641625]
 [ 0.00479701 -0.00219009  0.9999861   0.01670065]
 [-0.00095292 -0.99999716 -0.00218554 -0.07488038]
 [ 0.        0.        0.        1.        ]]
```

T_ic: (cam0 to imu0):

```
[[ 0.99998804  0.00479701 -0.00095292 -0.00656764]
 [-0.00094243 -0.00219009 -0.99999716 -0.07483754]
 [-0.00479908  0.9999861   -0.00218554 -0.01683328]
 [ 0.        0.        0.        1.        ]]
```

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)

0.0017123033924705262

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

```
[-0.01226438 -9.80652551  0.01816395]
```

Calibration configuration

Camera model: pinhole
Focal length: [351.5132148653381, 351.7557554938886]
Principal point: [342.8425988673232, 259.91793254535776]
Distortion model: equidistant
Distortion coefficients: [-0.03842764034005408, -0.005841411460411122, 0.003451041303088915, -0.001111111111111111]
Type: aprilgrid
Tags:
Rows: 7
Cols: 12
Size: 0.15 [m]
Spacing 0.0375 [m]

IMU configuration

=====

IMU0:

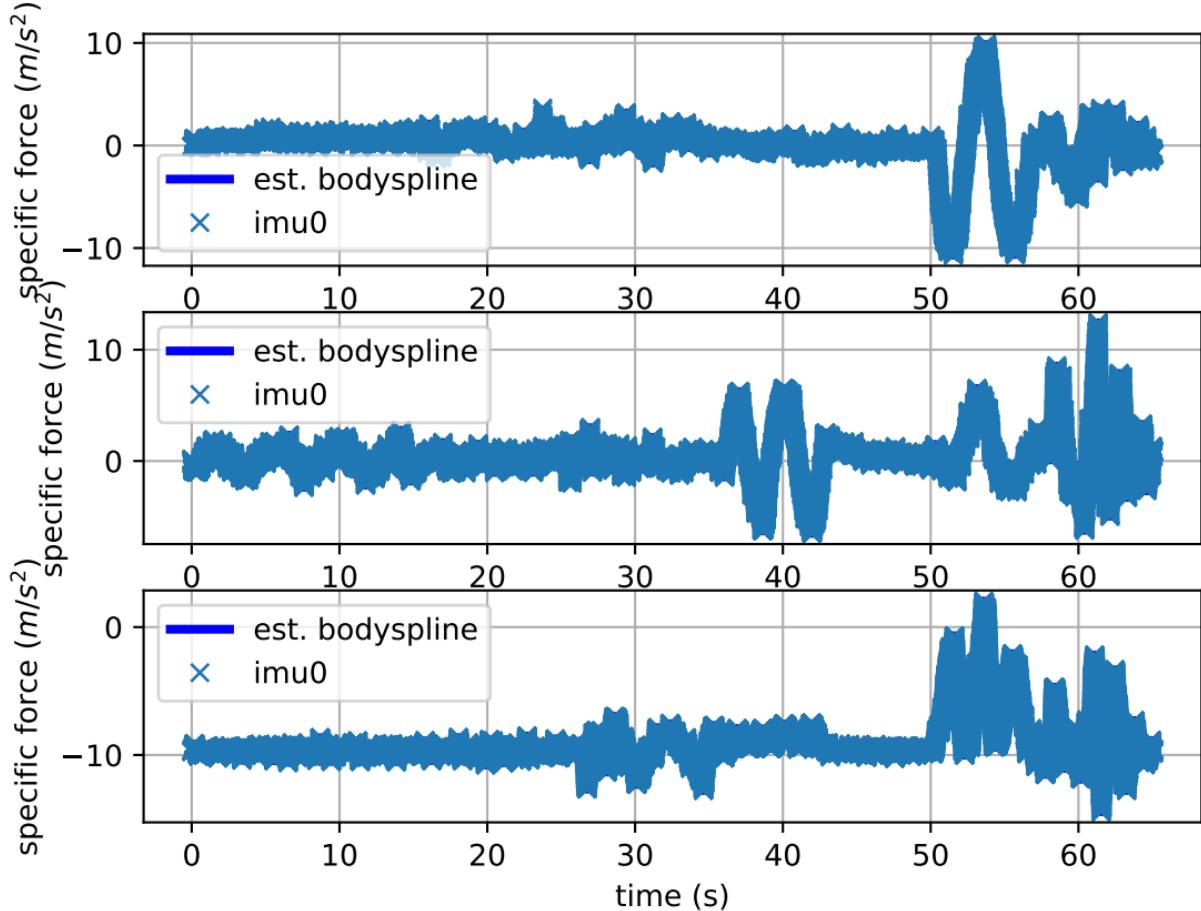
Model: calibrated
Update rate: 400.0
Accelerometer:
 Noise density: 0.019
 Noise density (discrete): 0.3799999999999995
 Random walk: 0.0043

Gyroscope:
 Noise density: 0.019
 Noise density (discrete): 0.3799999999999995
 Random walk: 0.000266

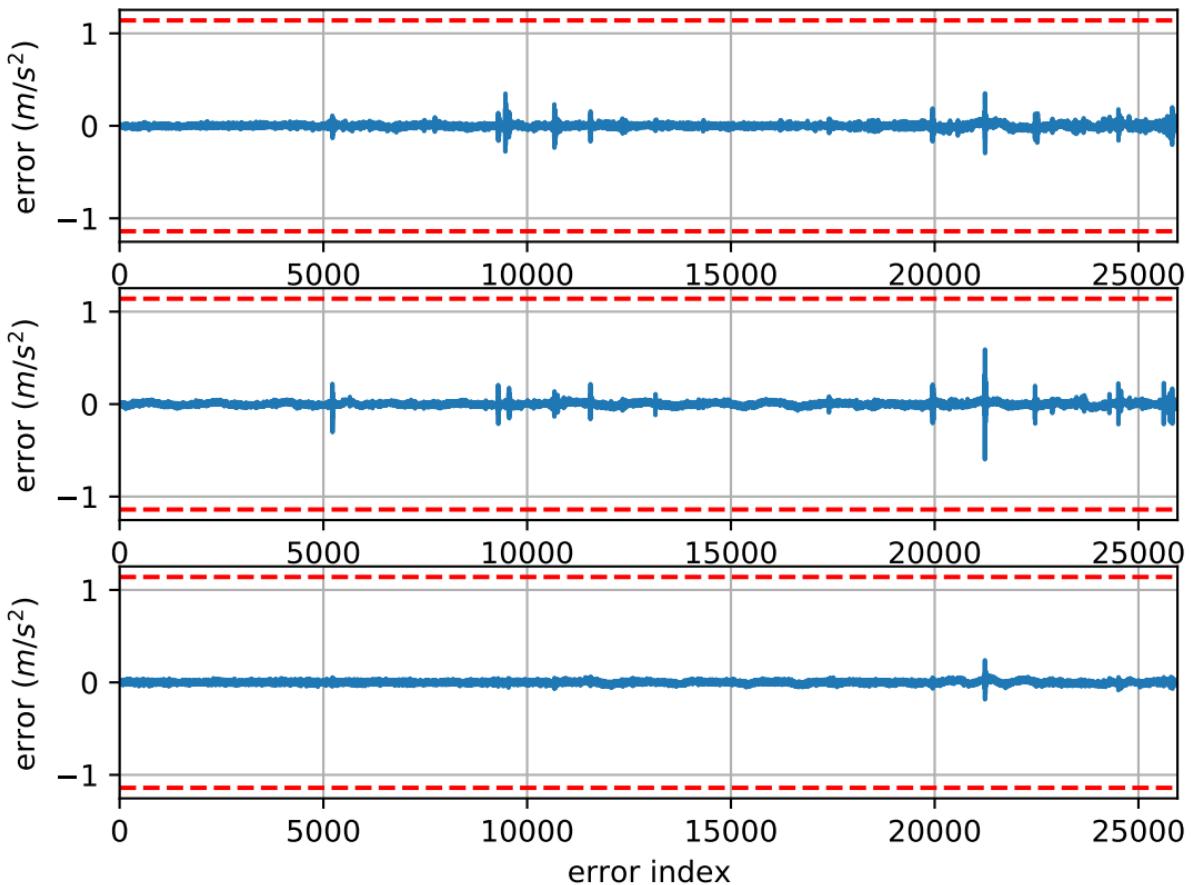
$T_{i \rightarrow b}$
[[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

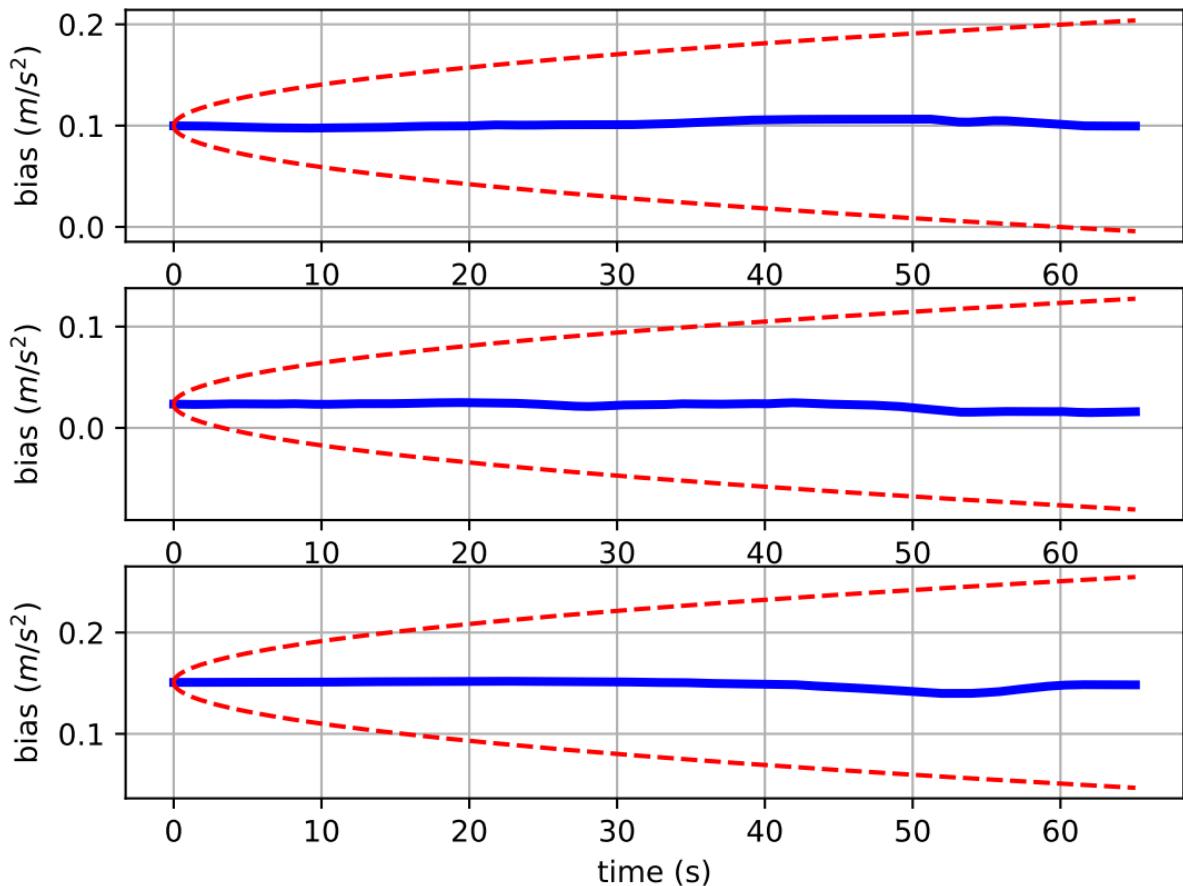
Comparison of predicted and measured specific force (imu0 frame)



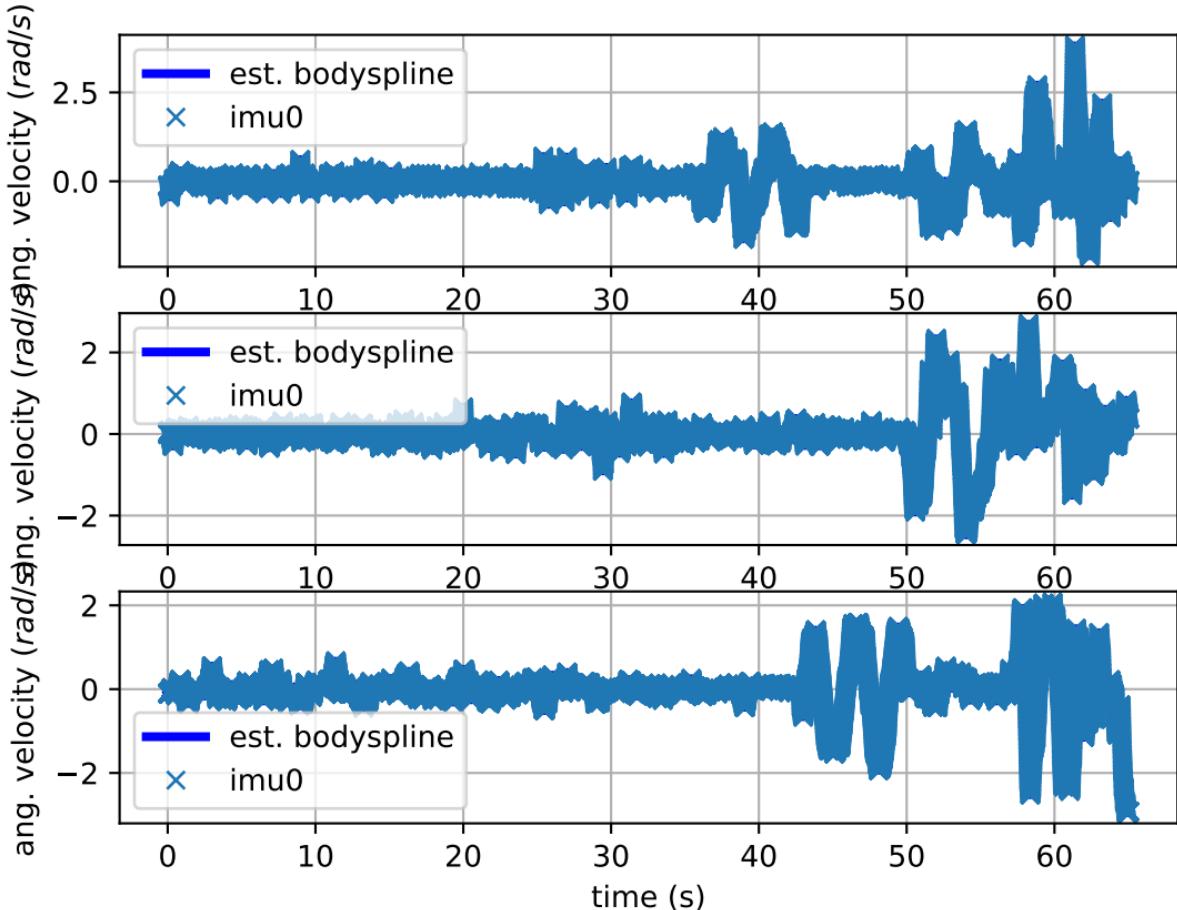
imu0: acceleration error



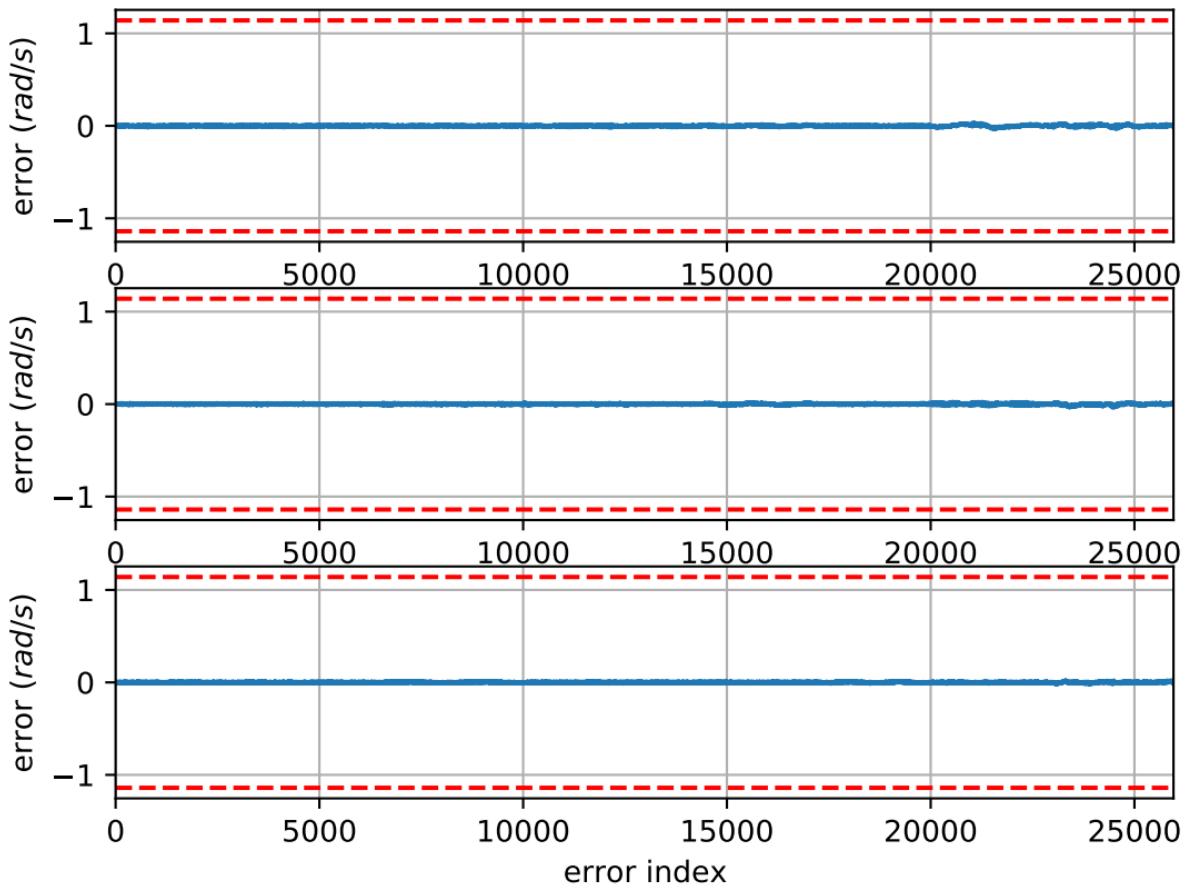
imu0: estimated accelerometer bias (imu frame)



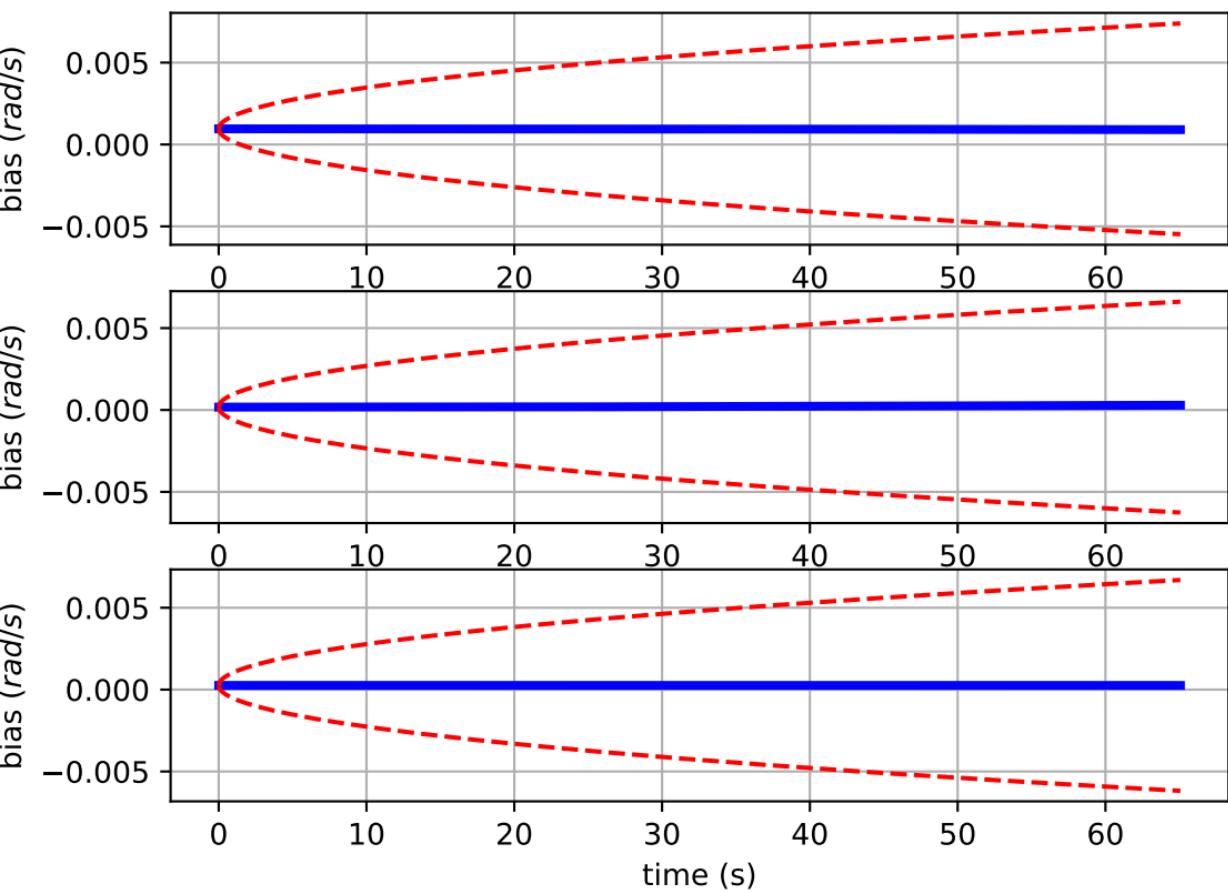
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

