

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 1.23856276648, median 1.07559212868, std: 0.746340426006
Gyroscope error (imu0): mean 0.00182912202307, median 1.85454948478e-08, std: 0.0132837056715
Accelerometer error (imu0): mean 0.00046960969418, median 0.00047417630287, std: 2.91405528227e-05

Residuals

Reprojection error (cam0) [px]: mean 1.23856276648, median 1.07559212868, std: 0.746340426006
Gyroscope error (imu0) [rad/s]: mean 3.74970014729e-05, median 3.8018264438e-10, std: 0.000272315966265
Accelerometer error (imu0) [m/s²]: mean 1.50275102138e-06, median 1.51736416918e-06, std: 9.32497690328e-08

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[ -0.00679098 -0.9994008  0.03394012  0.00004323]
 [ -0.10426958 -0.03304818 -0.99399984 -0.00028166]
 [  0.99452589 -0.01028916 -0.10398267  0.00003949]
 [  0.          0.          0.          1.        ]]
```

T_ic: (cam0 to imu0):

```
[[ -0.00679098 -0.10426958  0.99452589 -0.00006835]
 [ -0.9994008  -0.03304818 -0.01028916  0.0000343 ]
 [  0.03394012 -0.99399984 -0.10398267 -0.00027733]
 [  0.          0.          0.          1.        ]]
```

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

0.0

Gravity vector in target coords: [m/s²]

[0.23892023 -9.76170638 0.90577518]

Calibration configuration

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cam0

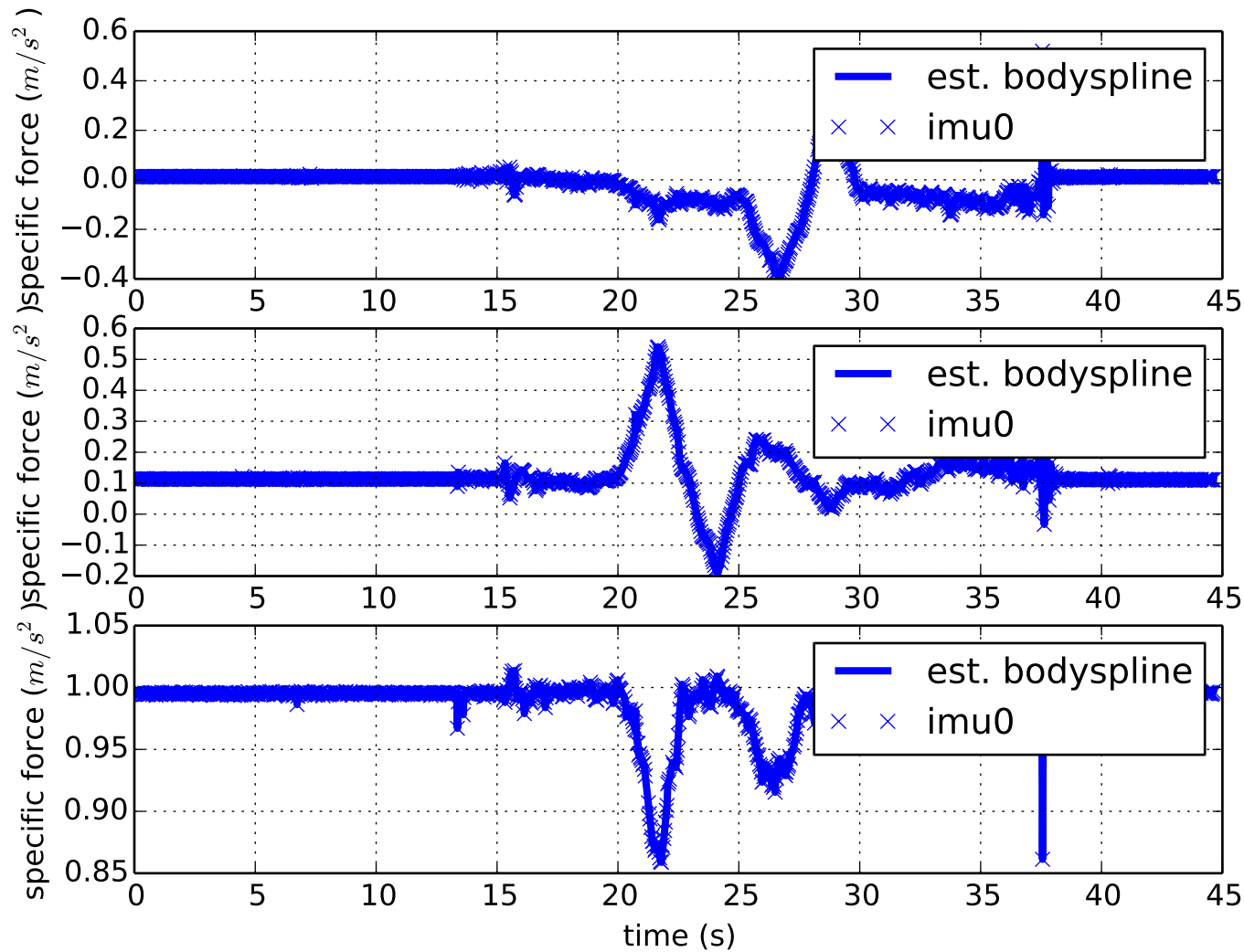
Camera model: omni
Focal length: [299.562, 299.387]
Principal point: [320.0354, 230.0574]
Omni xi: 0.8731
Distortion model: radtan
Distortion coefficients: [-0.0578, 0.0052, -0.00030508, 7.2296e-05]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.03 [m]
 Spacing 0.00999 [m]

IMU configuration
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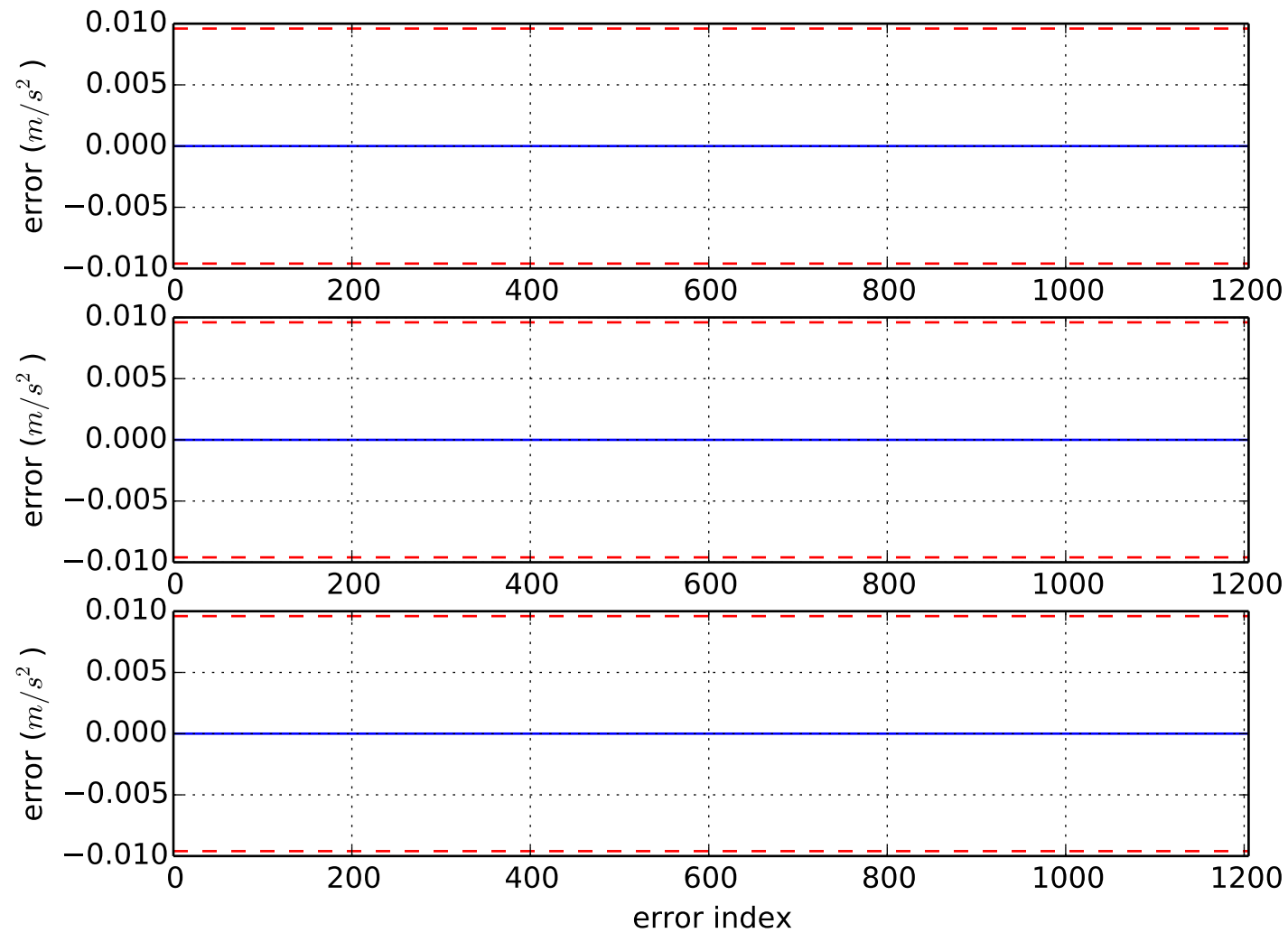
IMU0:

Model: calibrated
Update rate: 25
Accelerometer:
 Noise density: 0.00064
 Noise density (discrete): 0.0032
 Random walk: 8.86e-07
Gyroscope:
 Noise density: 0.0041
 Noise density (discrete): 0.0205
 Random walk: 5.7e-07
T_i_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]

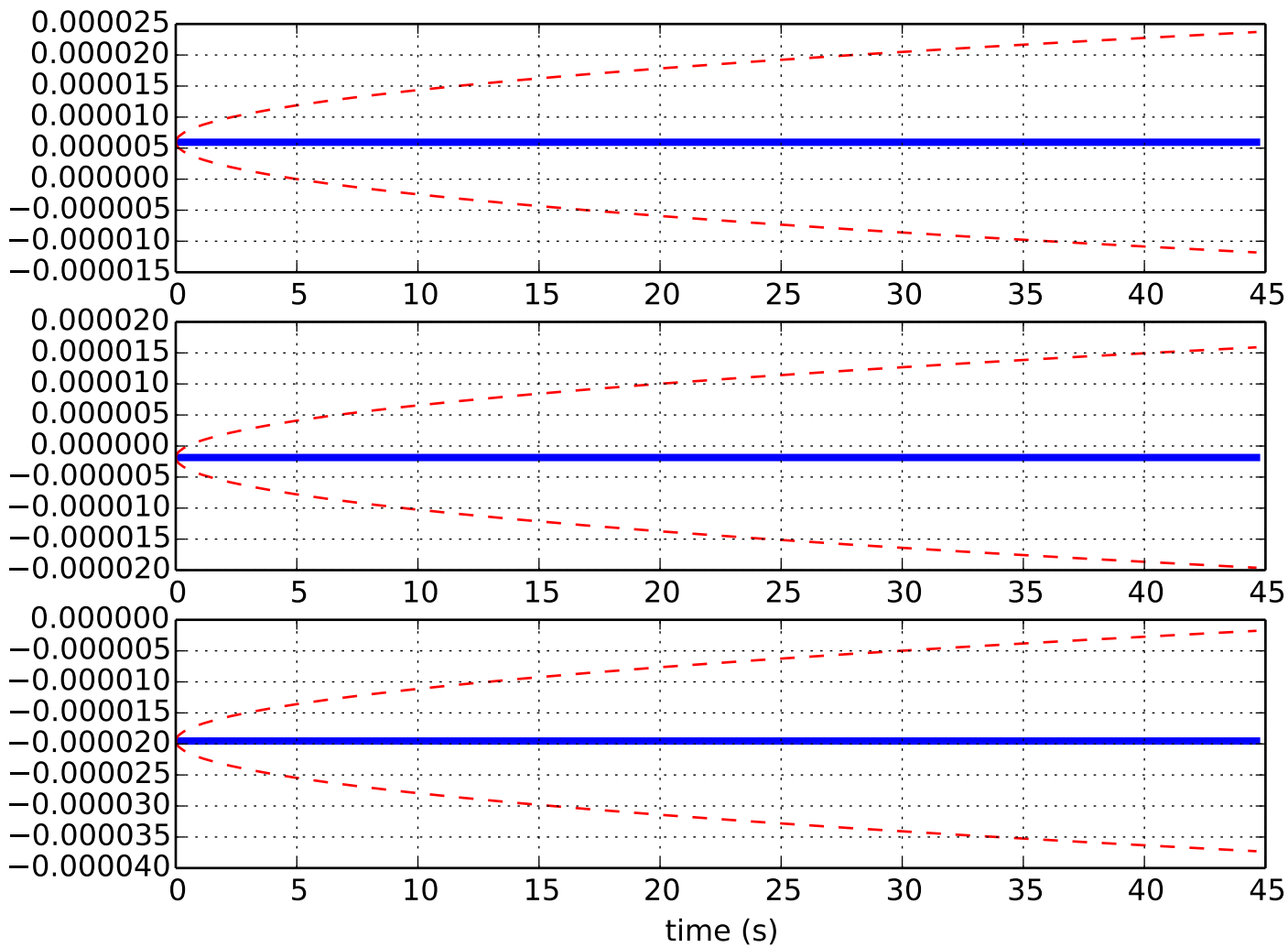
Comparison of predicted and measured specific force (imu0 frame)



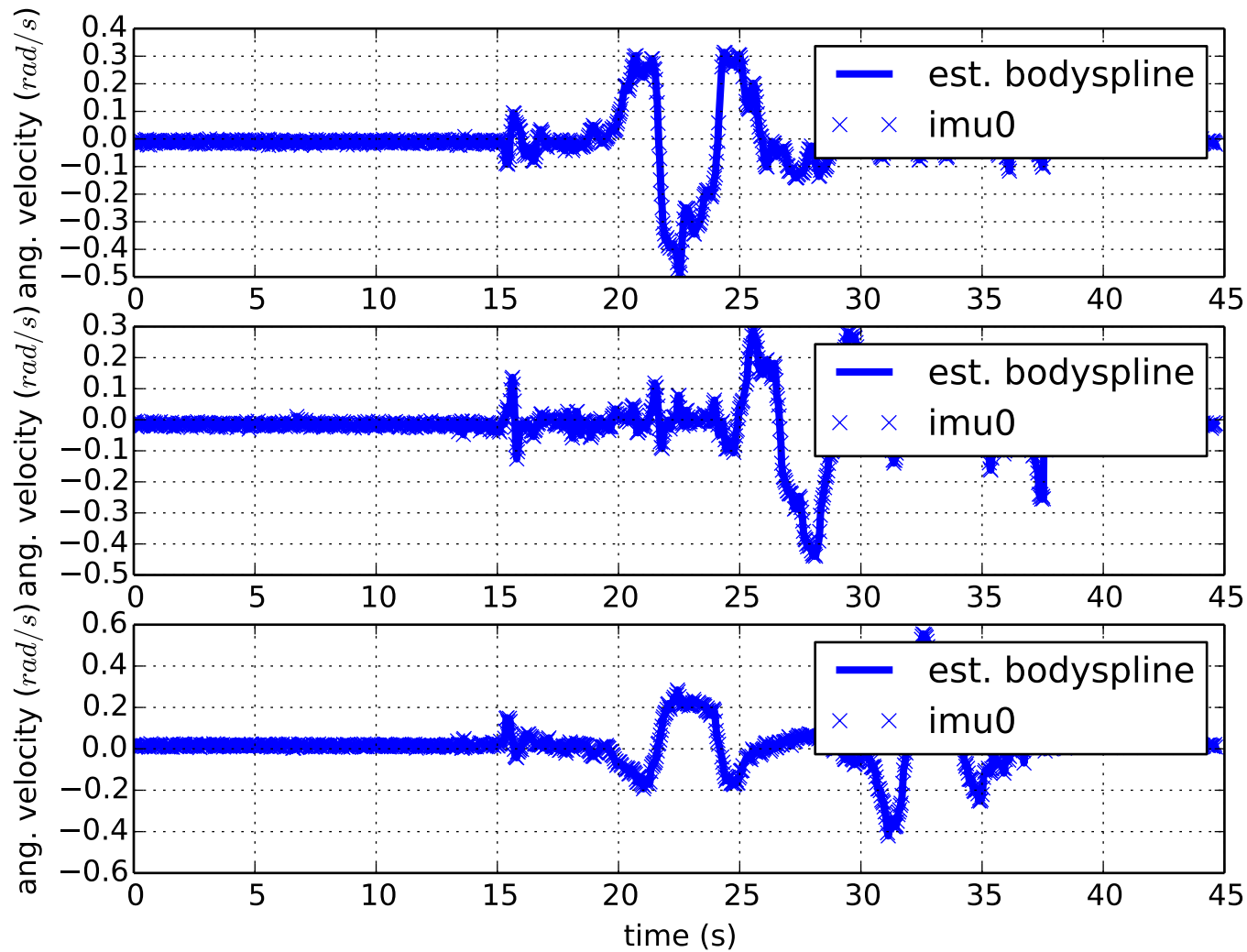
imu0: acceleration error



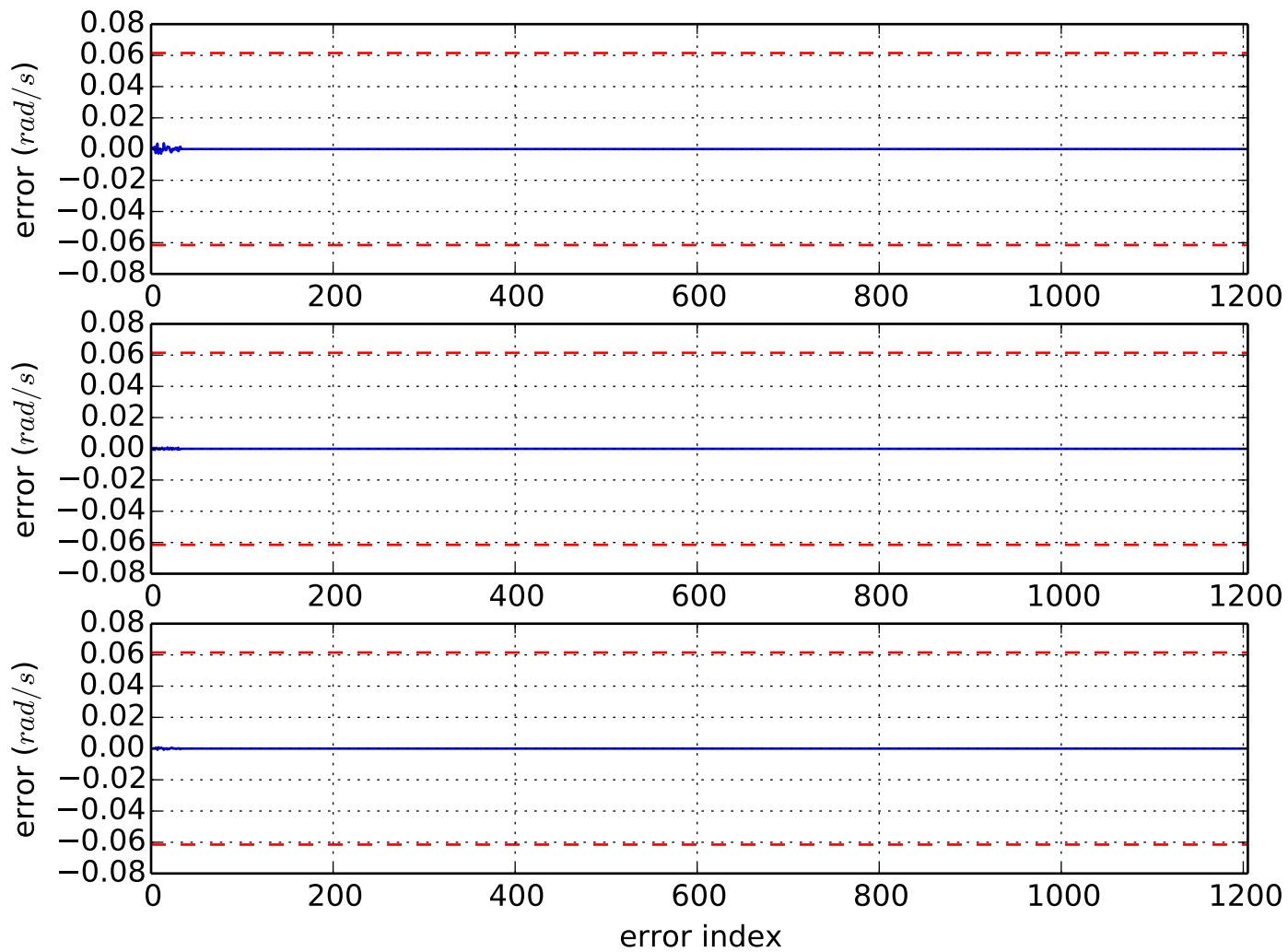
imu0: estimated accelerometer bias (imu frame)



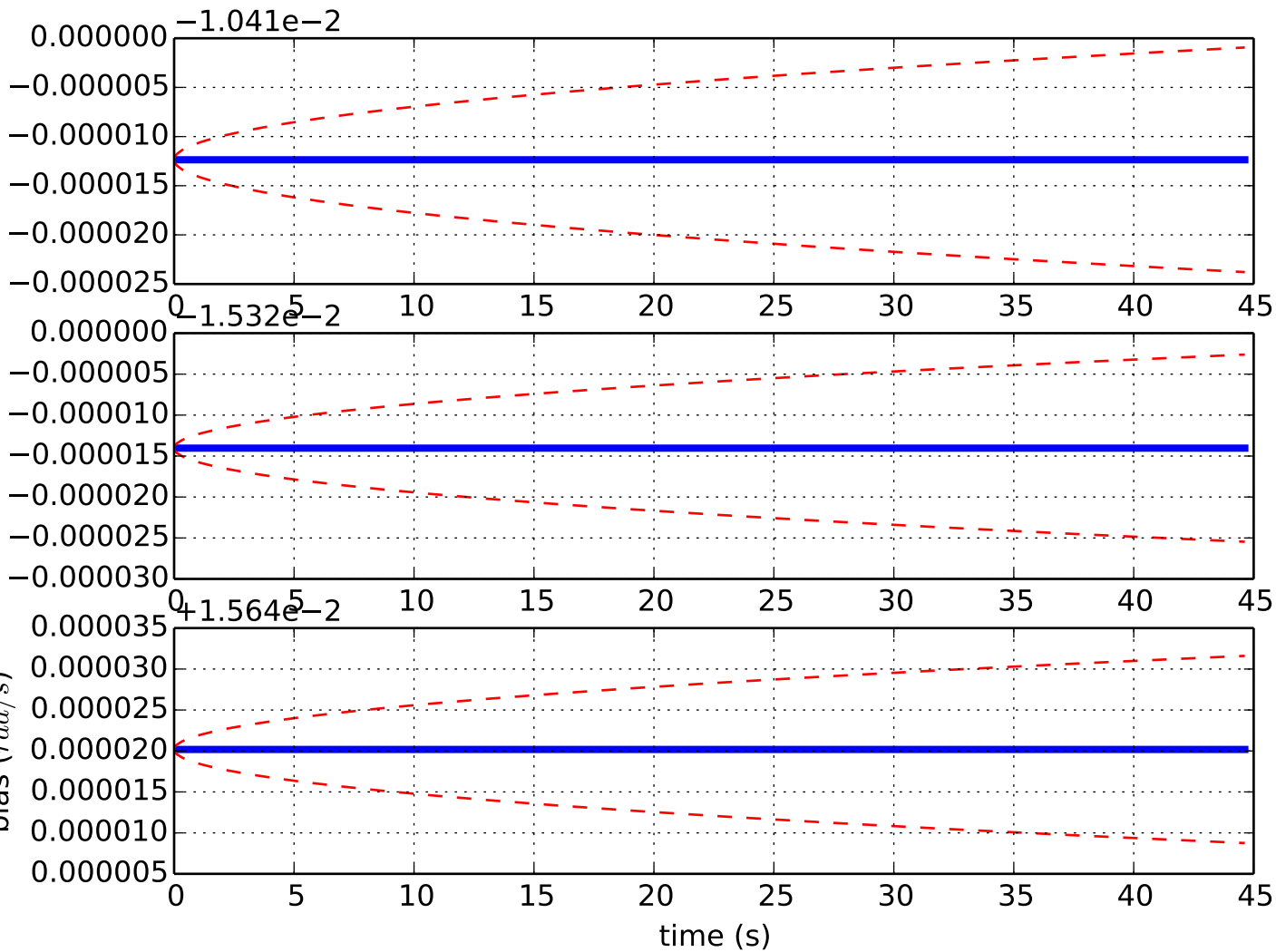
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

