

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 1.18216241539, median 1.07107408185, std: 0.696231047155

Gyroscope error (imu0): mean 0.00280836879556, median 1.11945269686e-07, std: 0.0191227201698

Accelerometer error (imu0): mean 0.000144650398934, median 0.000136168489883, std: 6.88004580245e-05

Residuals

Reprojection error (cam0) [px]: mean 1.18216241539, median 1.07107408185, std: 0.696231047155

Gyroscope error (imu0) [rad/s]: mean 5.7571560309e-05, median 2.29487802856e-09, std: 0.000392015763482

Accelerometer error (imu0) [m/s^2]: mean 4.62881276588e-07, median 4.35739167625e-07, std: 2.20161465678e-07

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[ 0.01940655 -0.98984964 0.14078734 -0.00039117]
 [-0.50752712 -0.13107538 -0.85160758 -0.00144325]
 [ 0.86141721 -0.05492662 -0.50491925 0.00165203]
 [ 0.         0.         0.         1.        ]]
```

T_ic: (cam0 to imu0):

```
[[ 0.01940655 -0.50752712 0.86141721 -0.00214799]
 [-0.98984964 -0.13107538 -0.05492662 -0.00048563]
 [ 0.14078734 -0.85160758 -0.50491925 -0.00033986]
 [ 0.         0.         0.         1.        ]]
```

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

0.0

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

[-1.11168994 -9.05432177 -3.59886449]

Calibration configuration

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cam0

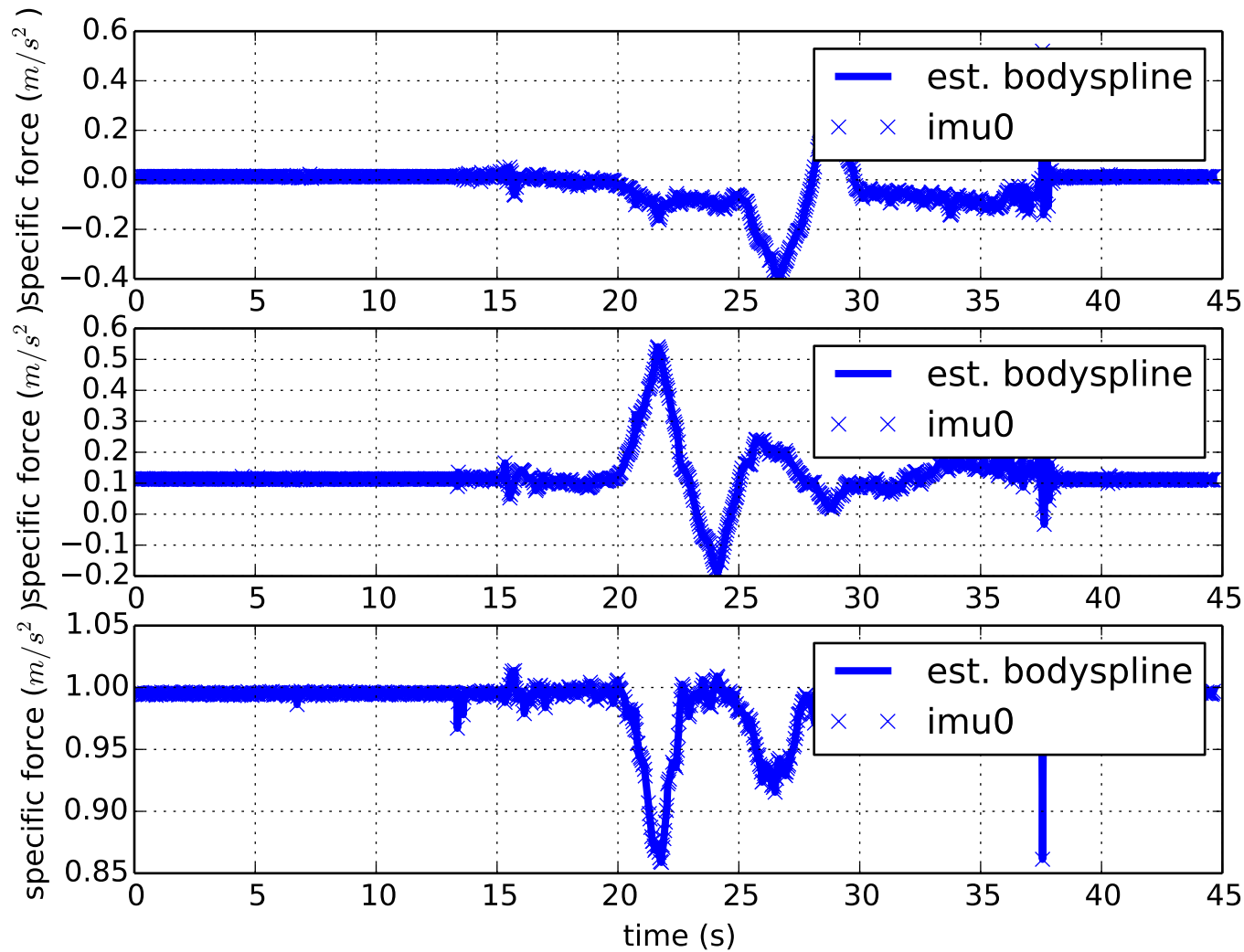
Camera model: omni
Focal length: [103.3344, 103.4761]
Principal point: [163.0093, 102.9141]
Omni xi: 1
Distortion model: radtan
Distortion coefficients: [1.2828, 0.0304, 0.0166, -0.0138]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.03 [m]
 Spacing 0.00999 [m]

IMU configuration
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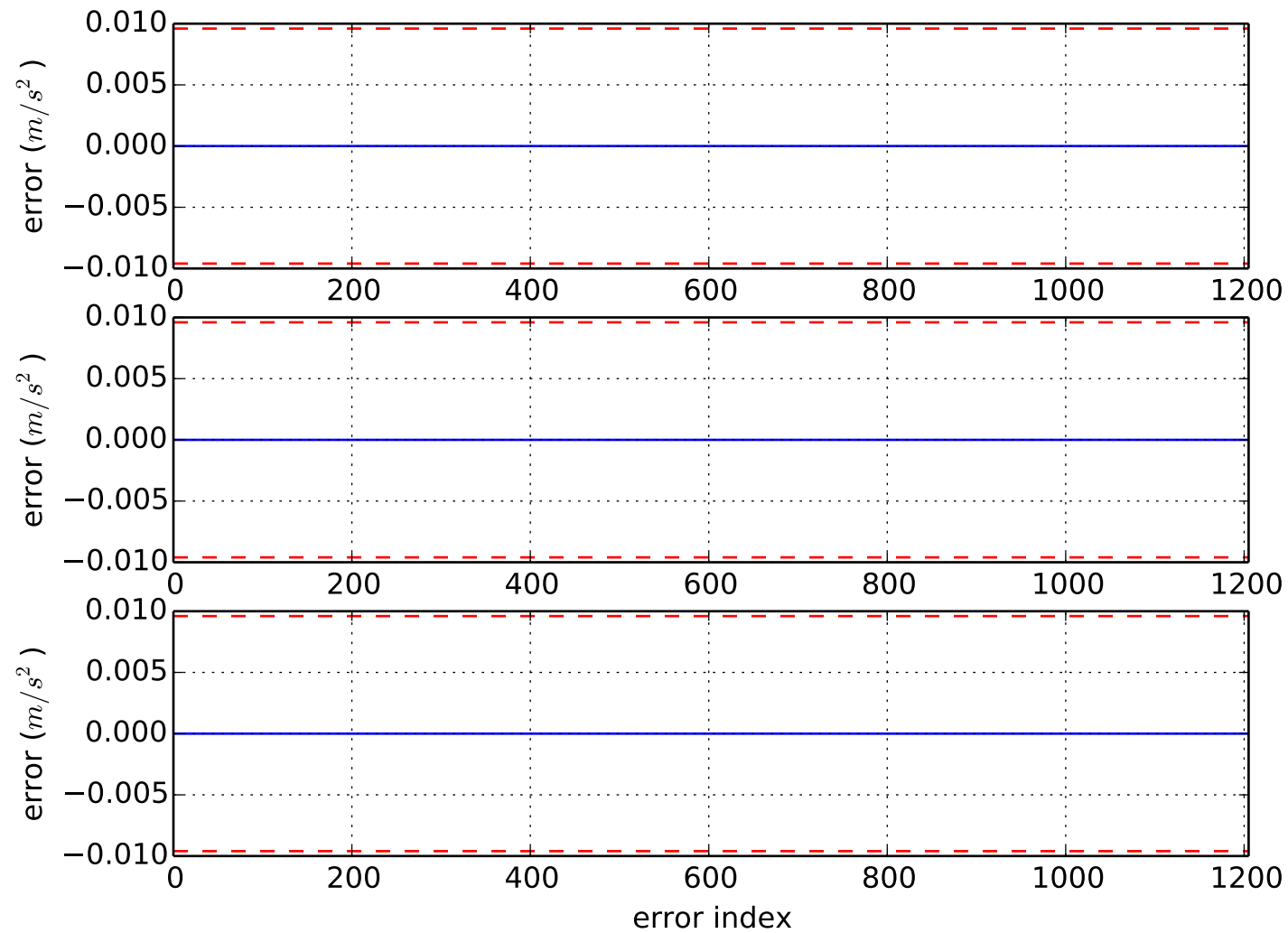
IMU0:

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]

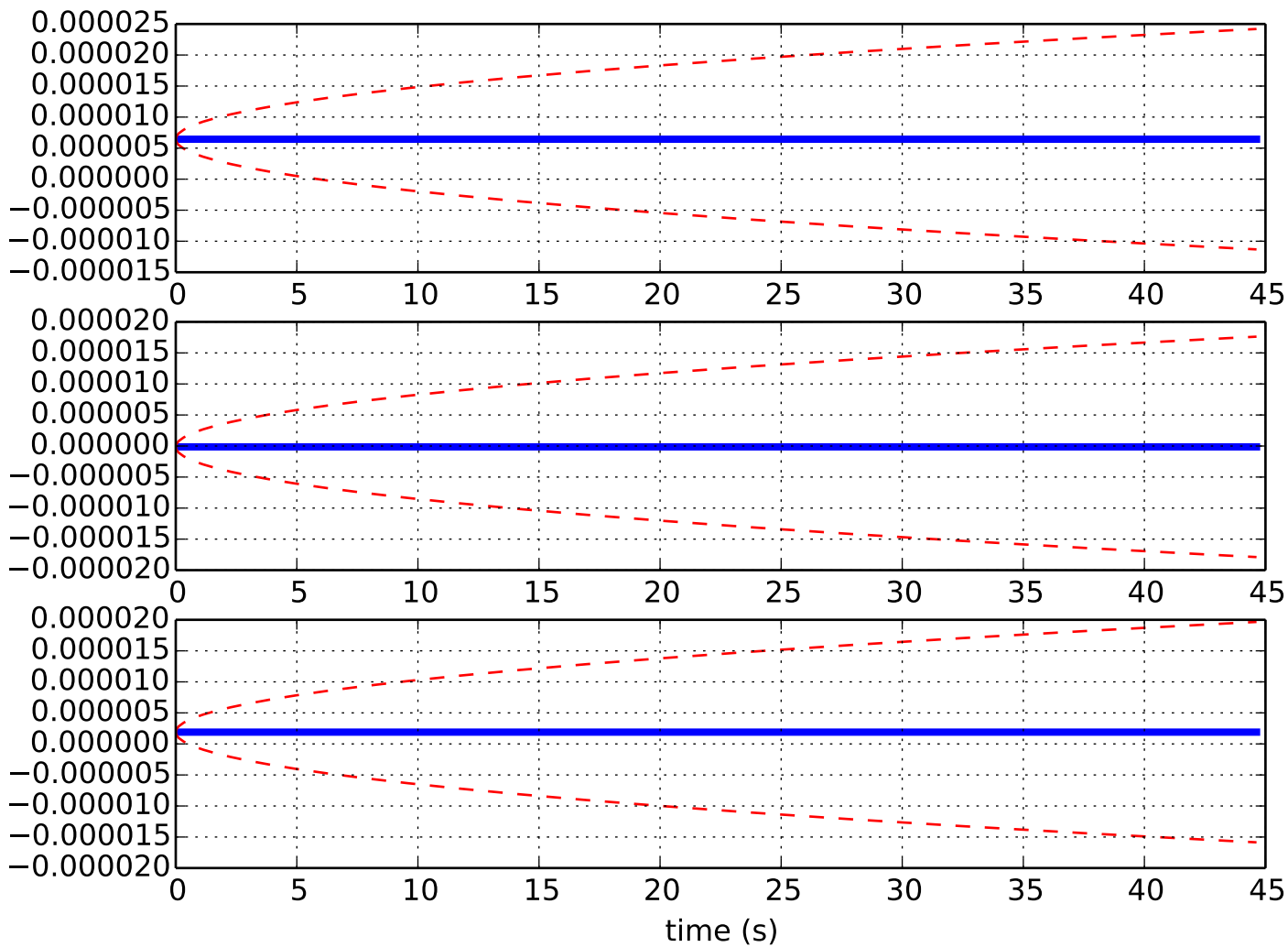
Comparison of predicted and measured specific force (imu0 frame)



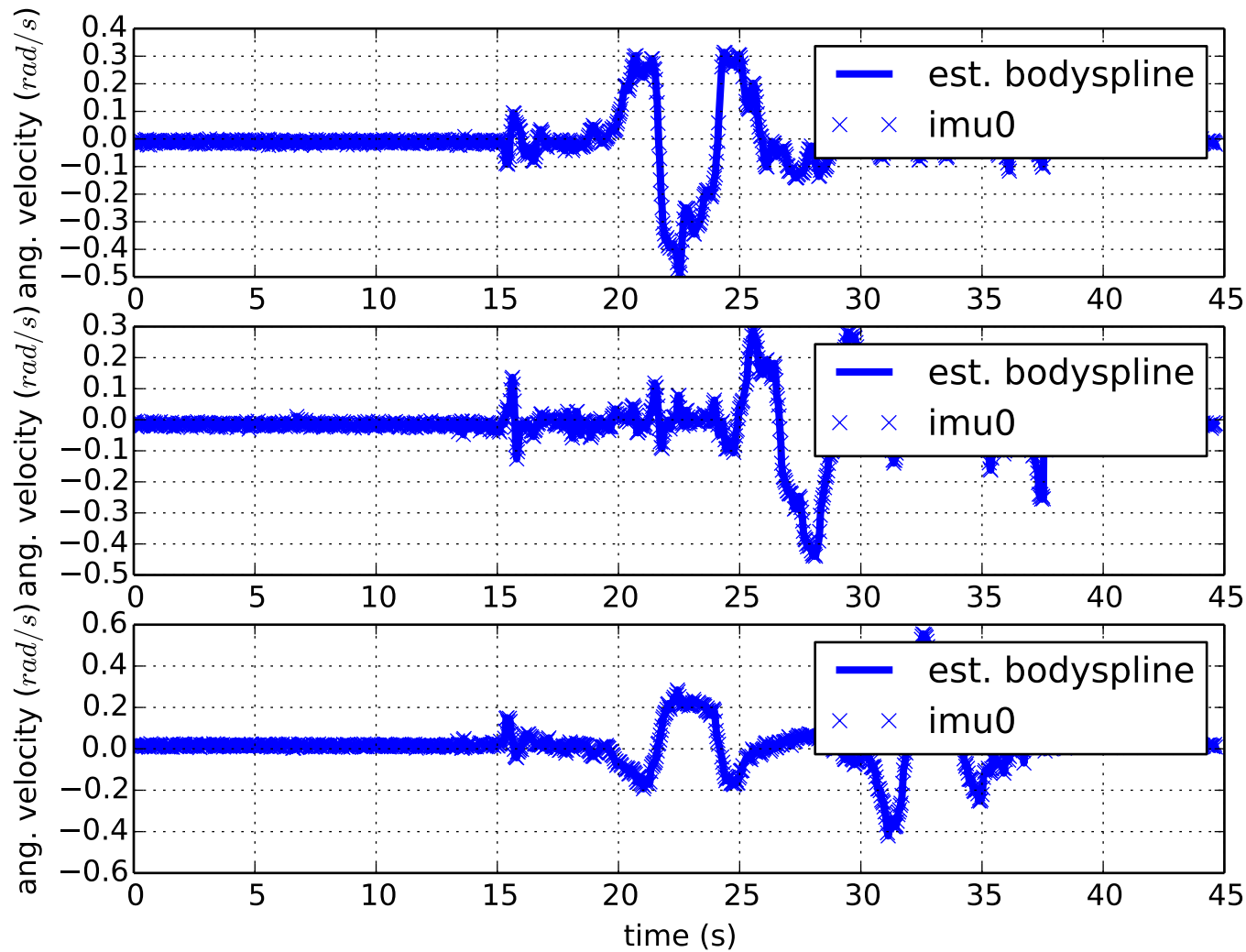
imu0: acceleration error



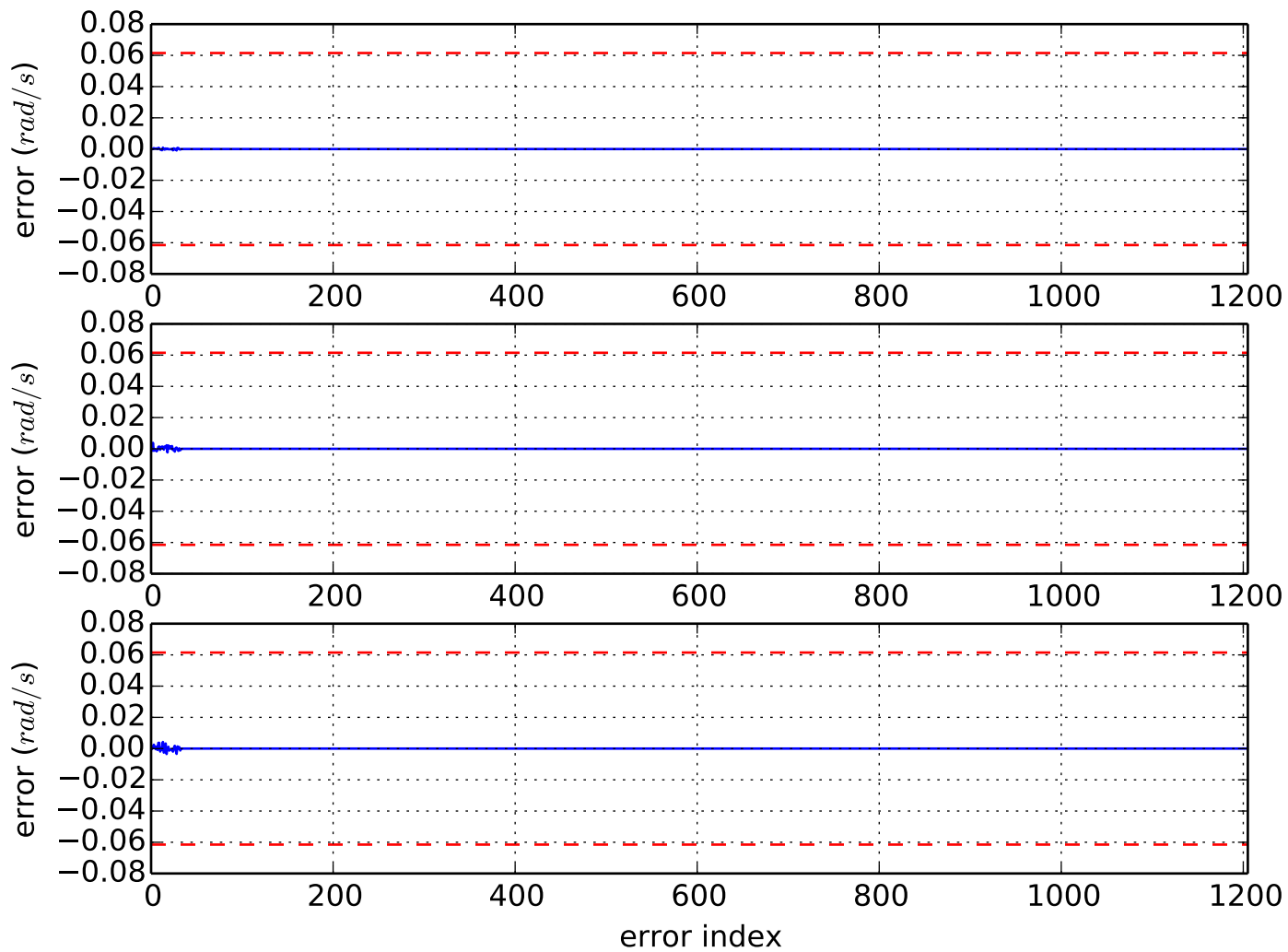
imu0: estimated accelerometer bias (imu frame)



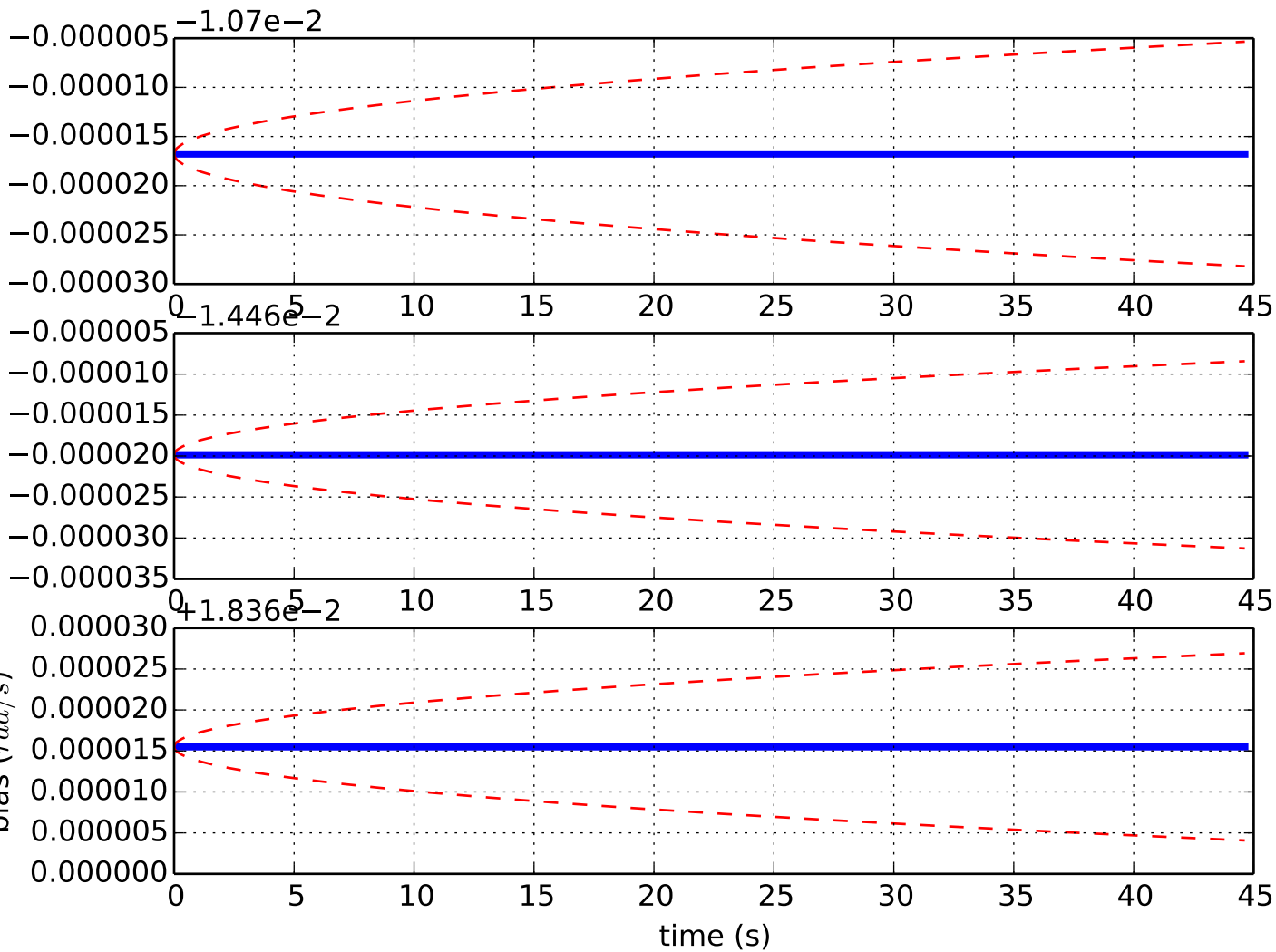
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

