

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.532236405779, median 0.53244401503, std: 0.177422173949

Gyroscope error (imu0): mean 0.000675196298145, median 2.21048026349e-08, std: 0.00449623936442

Accelerometer error (imu0): mean 0.000165164292637, median 0.000166981803013, std: 1.13862284567e-05

Residuals

Reprojection error (cam0) [px]: mean 0.532236405779, median 0.53244401503, std: 0.177422173949

Gyroscope error (imu0) [rad/s]: mean 1.3841524112e-05, median 4.53148454015e-10, std: 9.21729069706e-05

Accelerometer error (imu0) [m/s²]: mean 5.28525736438e-07, median 5.34341769641e-07, std: 3.64359310615e-08

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.01949301 -0.99943288 0.02745798 -0.00019846]

[-0.05660294 -0.026316 -0.99804989 -0.00034841]

[0.99820646 -0.0210092 -0.05605786 0.00001429]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.01949301 -0.05660294 0.99820646 -0.00003785]

[-0.99943288 -0.026316 -0.0210092 -0.00020722]

[0.02745798 -0.99804989 -0.05605786 -0.00034148]

[0. 0. 0. 1.]]

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

0.0

Gravity vector in target coords: [m/s²]

[0.24571119 -9.76357697 0.88352348]

Calibration configuration

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cam0

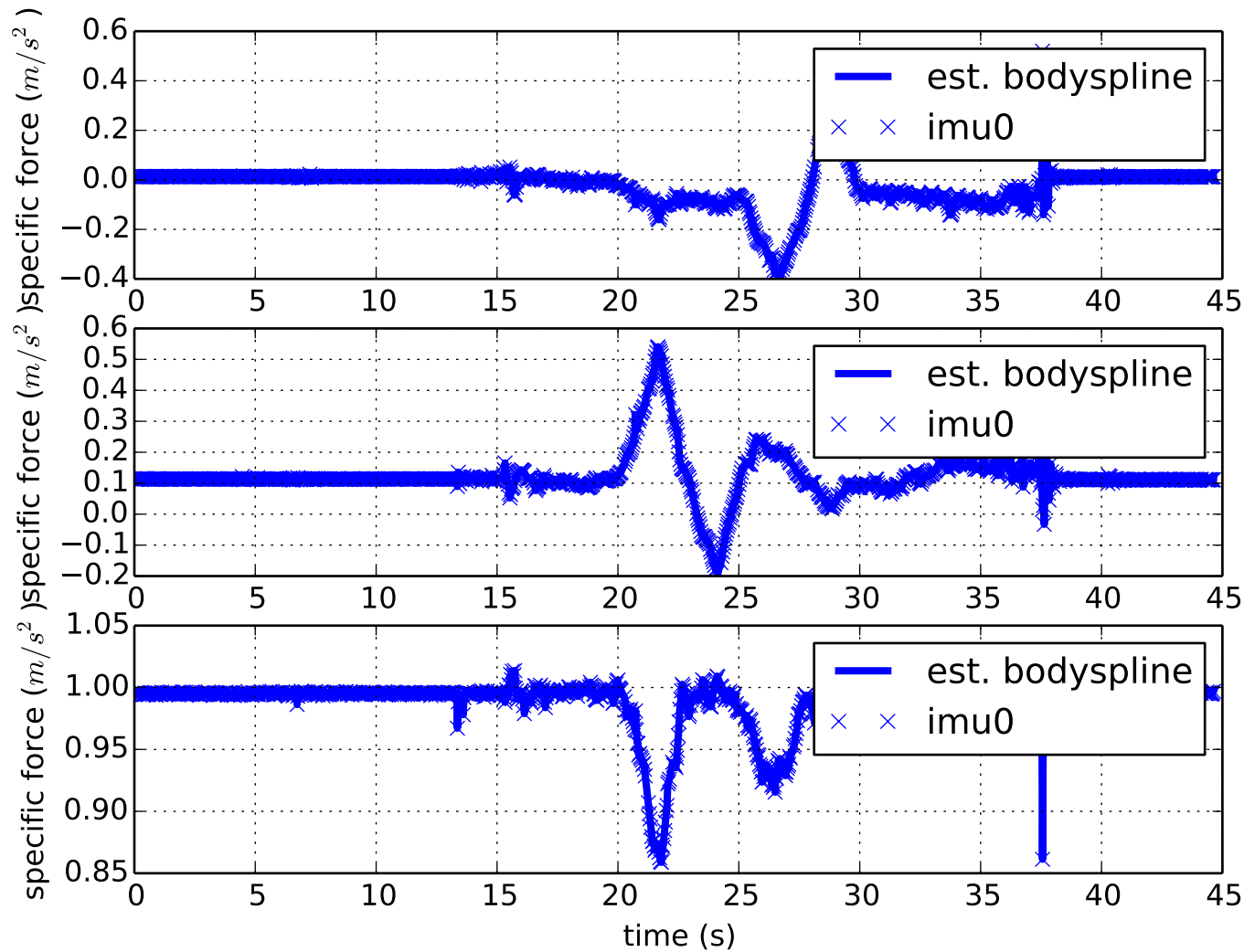
Camera model: omni
Focal length: [822.8369, 824.154721]
Principal point: [322.830094, 203.9253462]
Omni xi: 3.28244682
Distortion model: radtan
Distortion coefficients: [0.8560437616, 17.43165613, 0.0, 0.0]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.03 [m]
 Spacing 0.00999 [m]

IMU configuration
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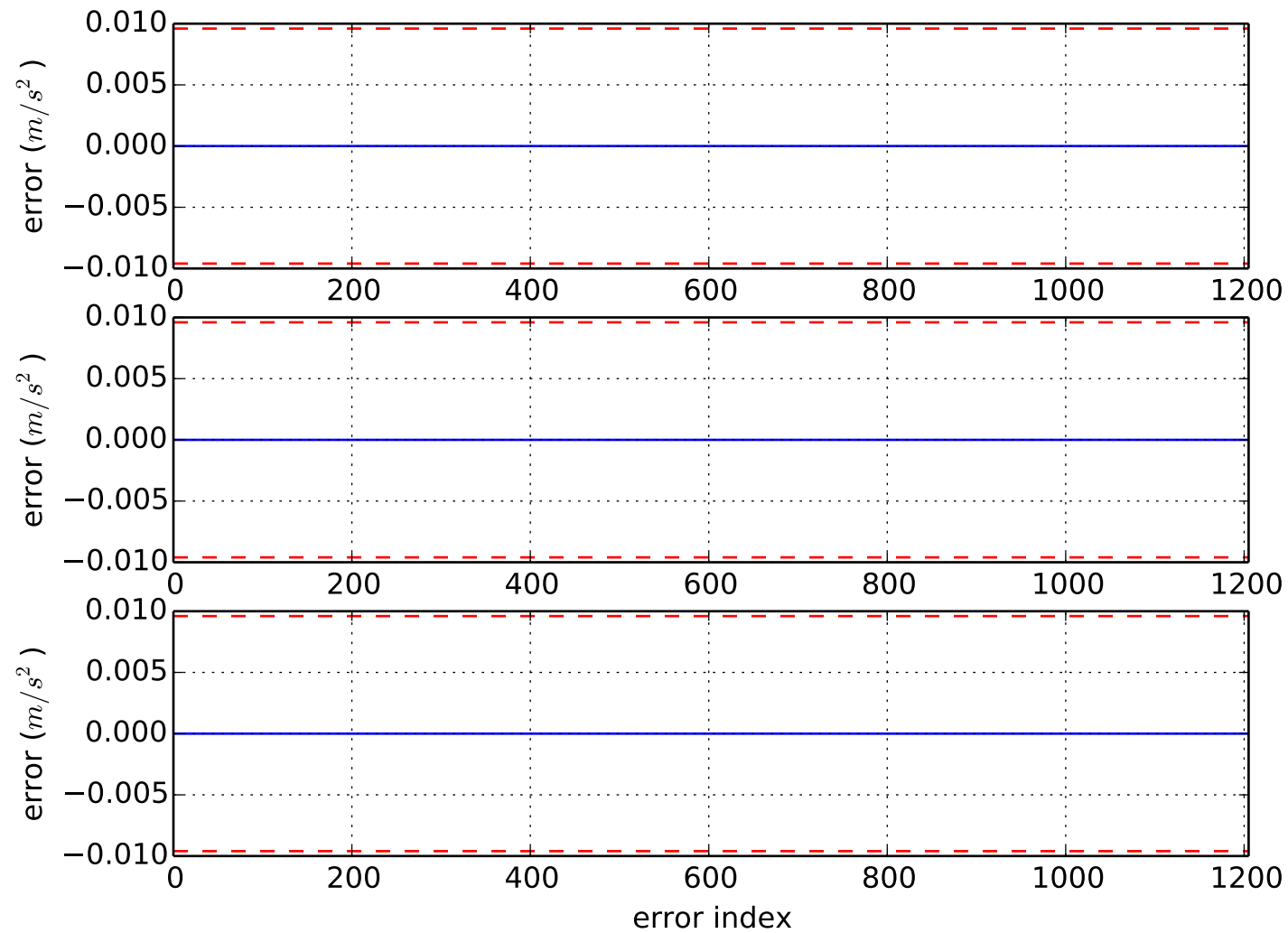
IMU0:

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]

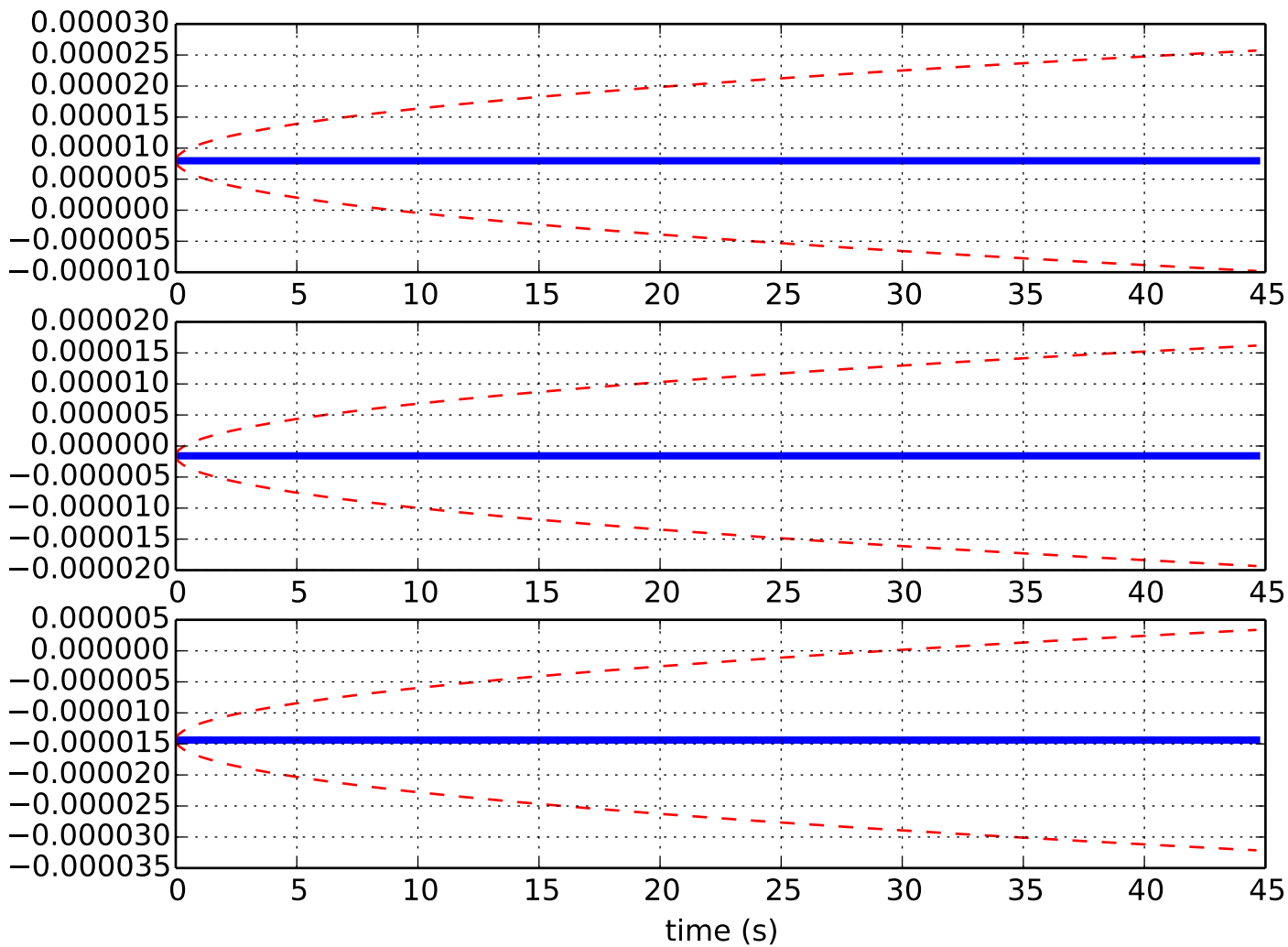
Comparison of predicted and measured specific force (imu0 frame)



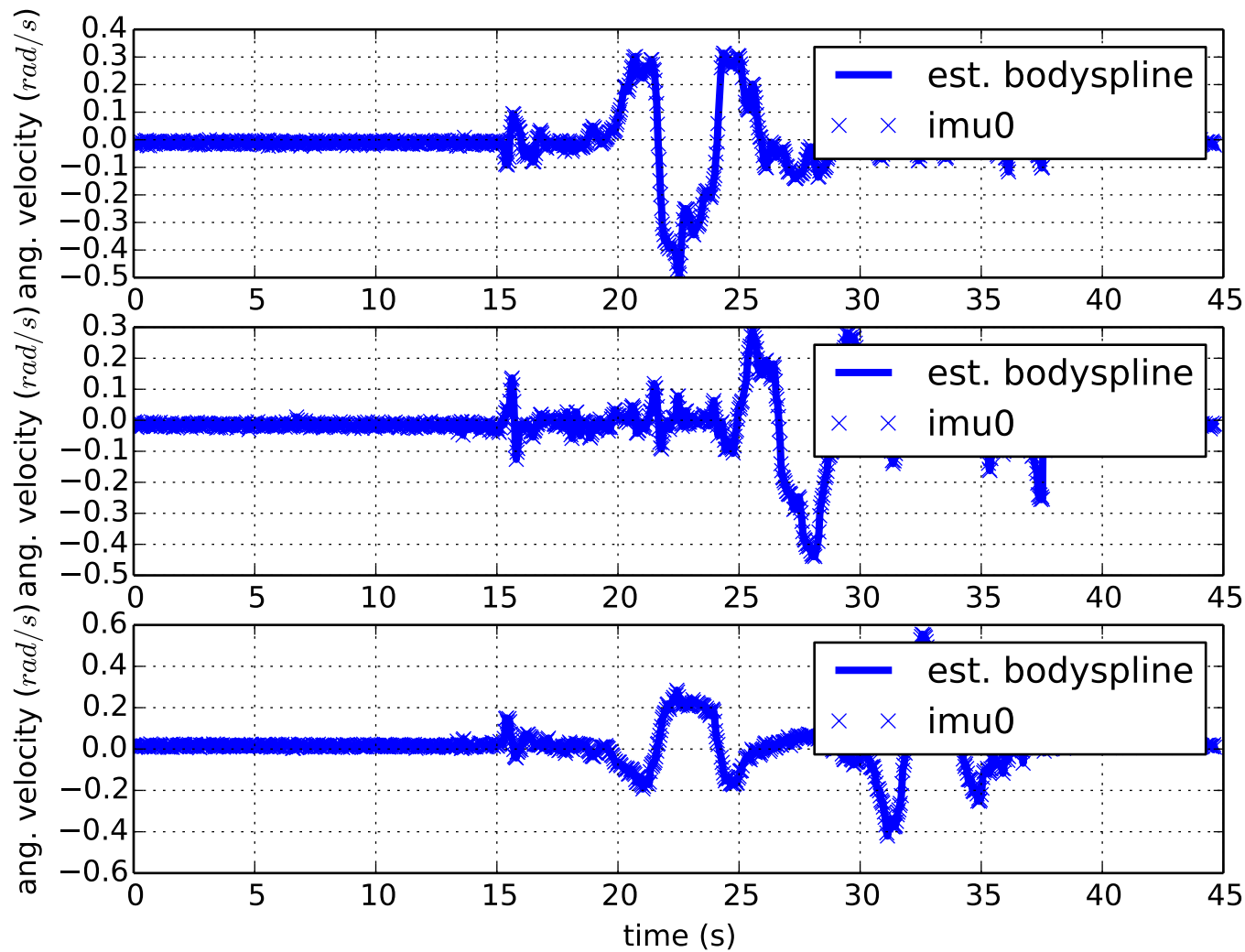
imu0: acceleration error



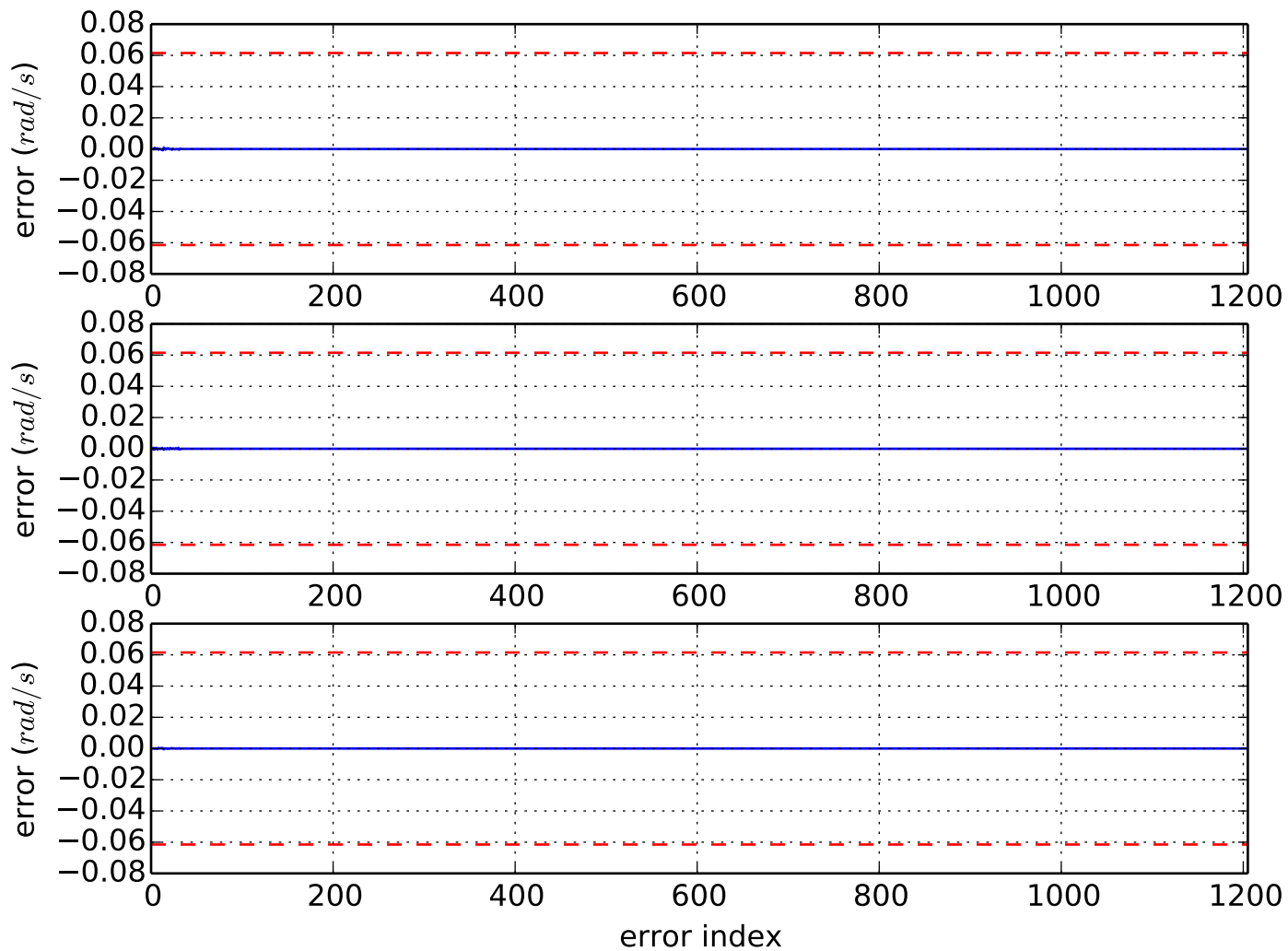
imu0: estimated accelerometer bias (imu frame)



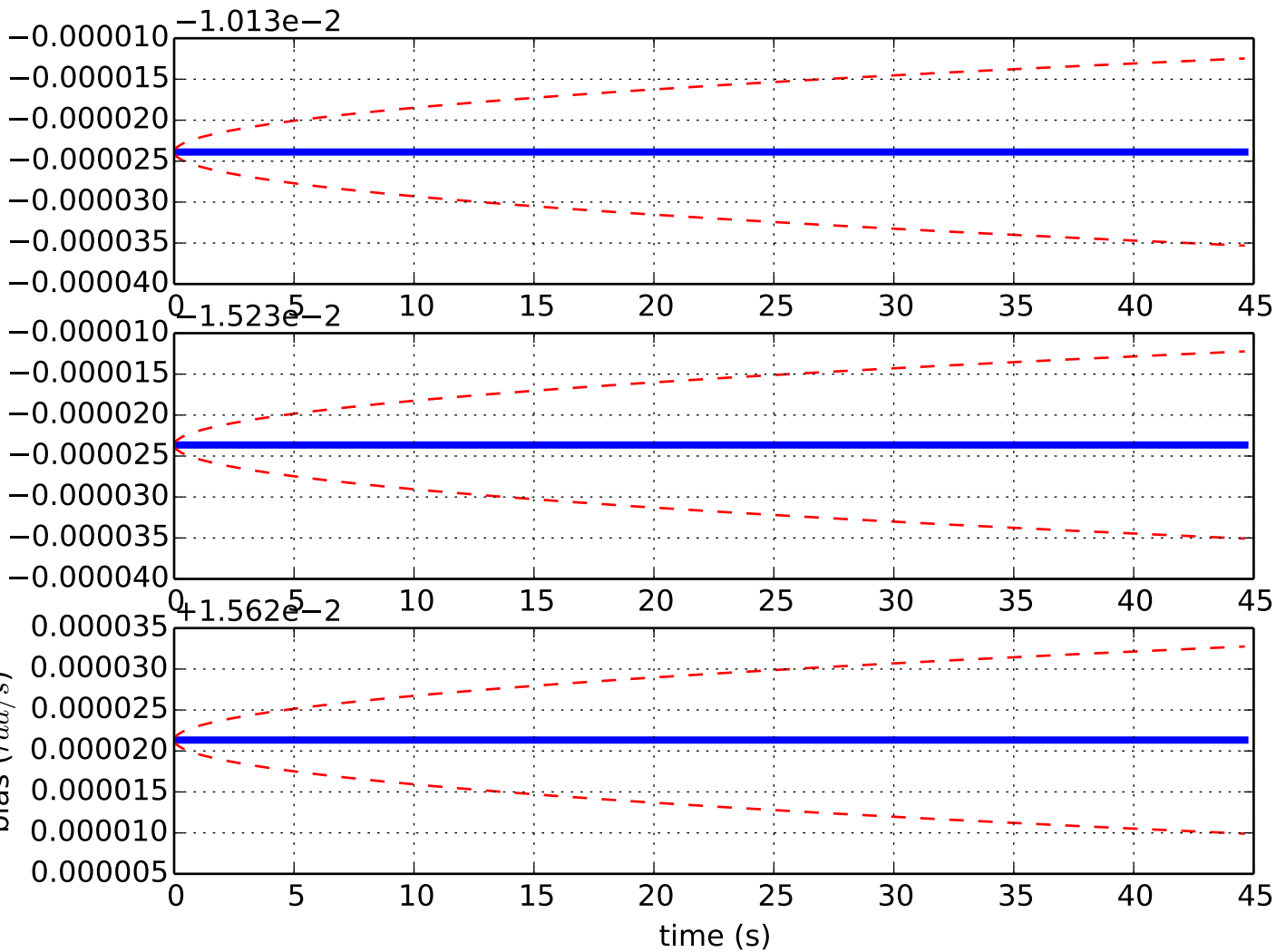
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

