

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.694672305268, median 0.500769362202, std: 0.622982692236

Gyroscope error (imu0): mean 2.6140388183, median 1.66465413393, std: 3.04298042959

Accelerometer error (imu0): mean 1.0782207492, median 0.760417103953, std: 1.08139281699

Residuals

Reprojection error (cam0) [px]: mean 0.694672305268, median 0.500769362202, std: 0.622982692236

Gyroscope error (imu0) [rad/s]: mean 0.00739361829881, median 0.00470835290573, std: 0.00860684838712

Accelerometer error (imu0) [m/s²]: mean 0.12198675254, median 0.0860313745177, std: 0.122345631044

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.00357265 -0.00253994 0.99999039 0.02245631]

[-0.00355775 -0.99999048 -0.00252723 -0.00389295]

[0.99998729 -0.00354869 -0.00358165 -0.03608384]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.00357265 -0.00355775 0.99998729 0.0359893]

[-0.00253994 -0.99999048 -0.00354869 -0.00396392]

[0.99999039 -0.00252723 -0.00358165 -0.02259517]

[0. 0. 0. 1.]]

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

0.0002529542691947281

Gravity vector in target coords: [m/s²]

[0.02004229 -9.39501986 -2.81098259]

Calibration configuration

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cam0

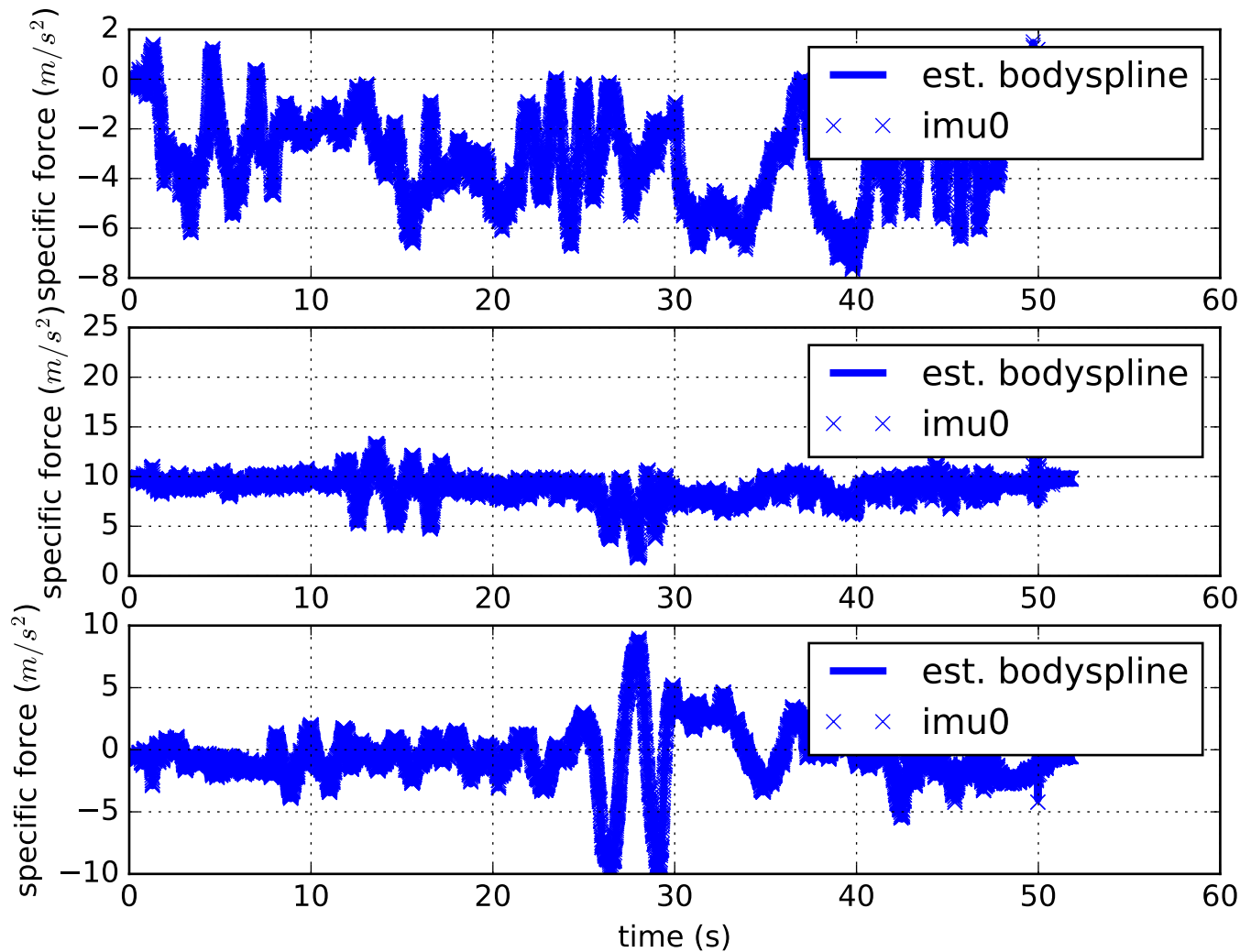
Camera model: pinhole
Focal length: [615.3483602615959, 615.7788238579407]
Principal point: [722.6030303539713, 559.3938260066852]
Distortion model: equidistant
Distortion coefficients: [0.00724234711283763, 0.034886170986066924, -0.023451860903234357, 0.008058878937190395]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.083 [m]
 Spacing 0.0249 [m]

IMU configuration
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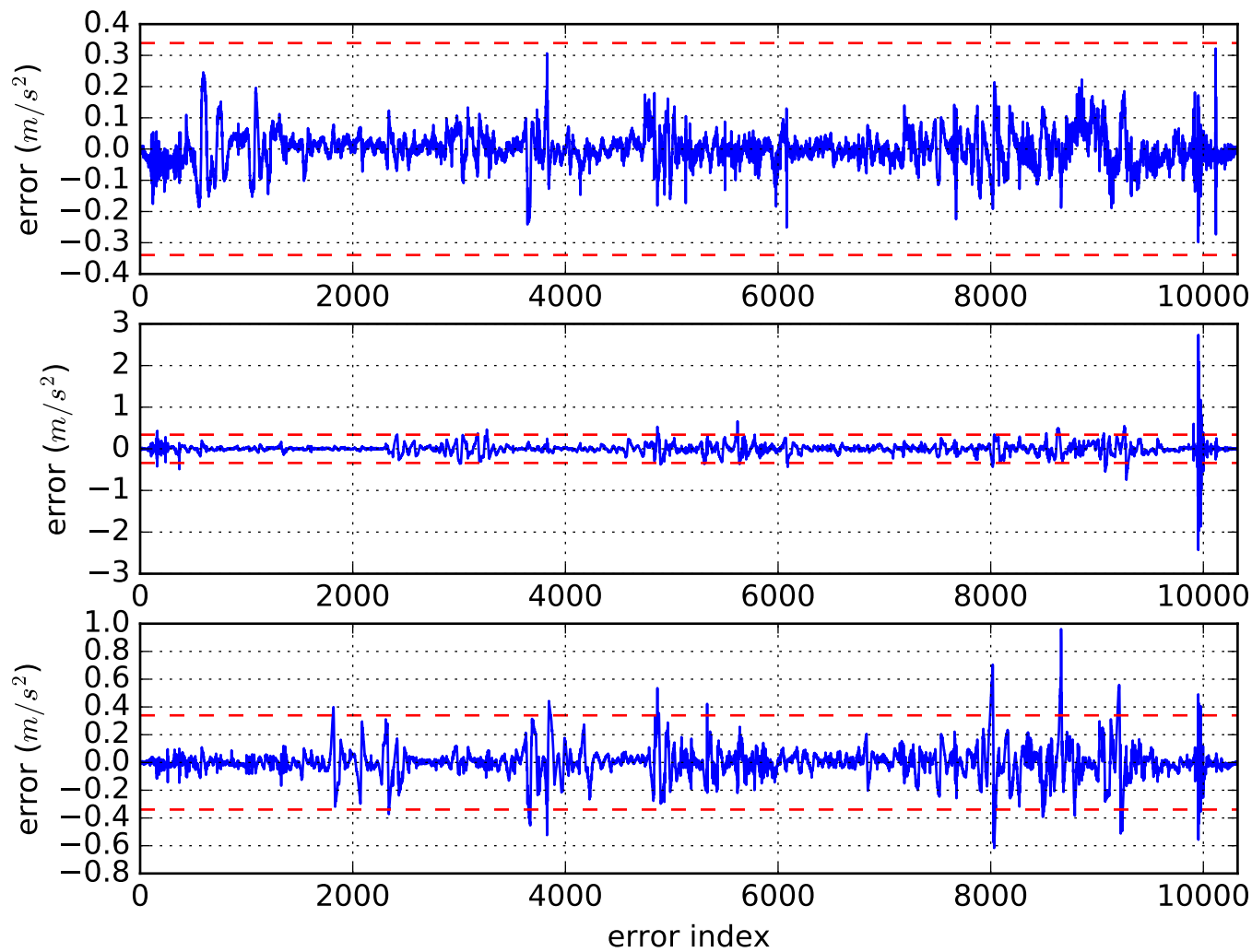
IMU0:

Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.008
 Noise density (discrete): 0.11313708499
 Random walk: 0.0002
Gyroscope:
 Noise density: 0.0002
 Noise density (discrete): 0.00282842712475
 Random walk: 4e-06
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]

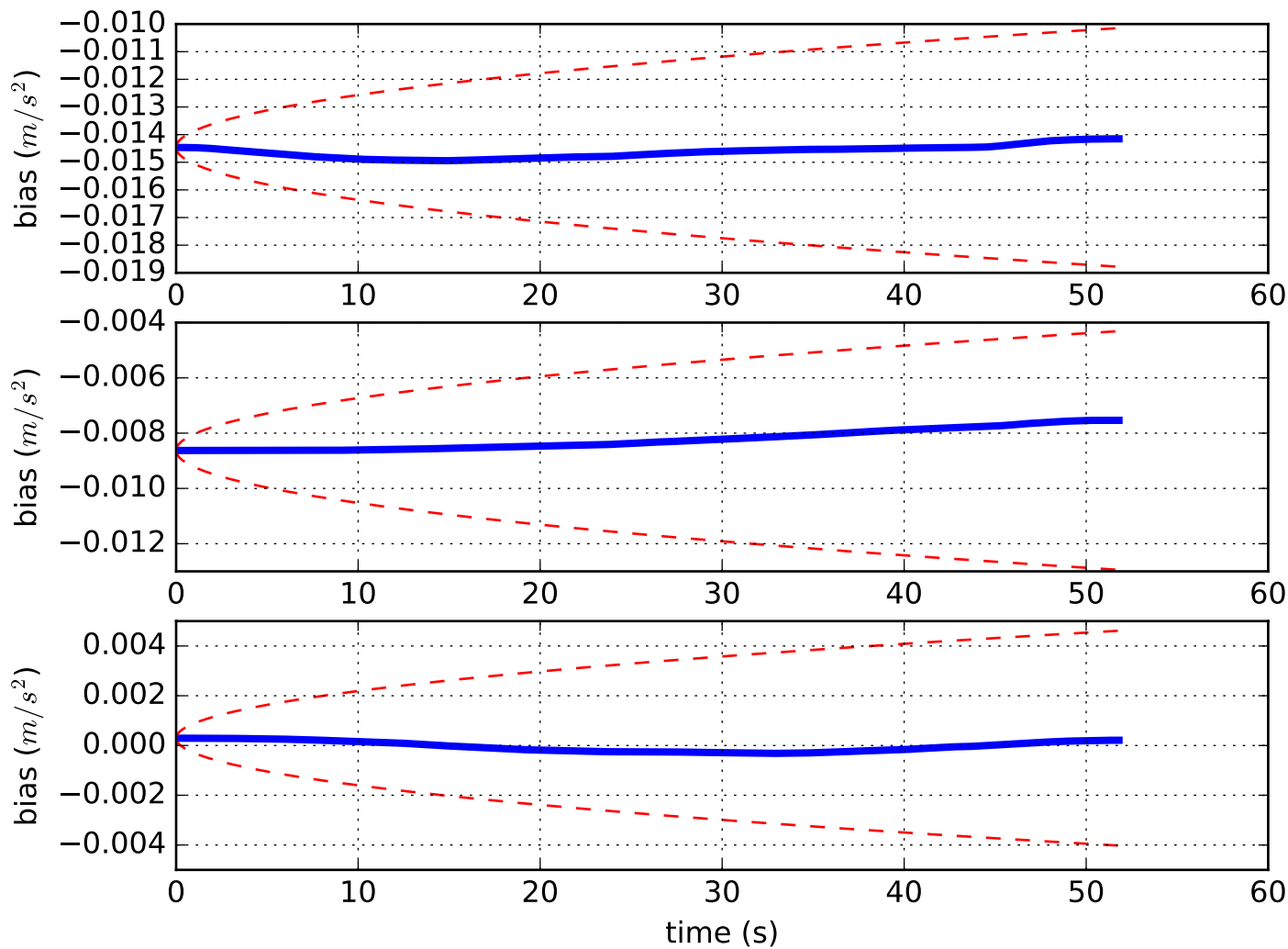
Comparison of predicted and measured specific force (imu0 frame)



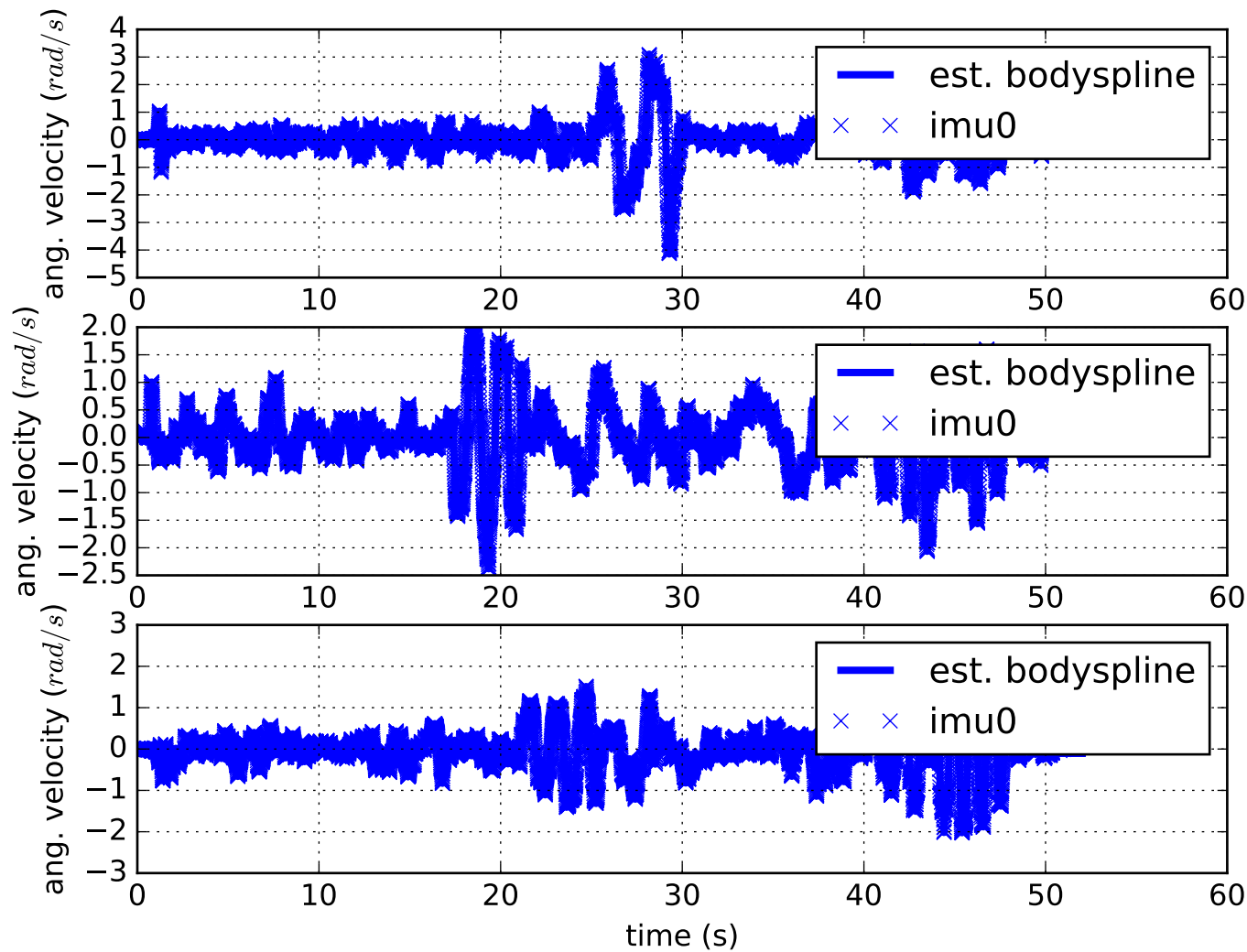
imu0: acceleration error



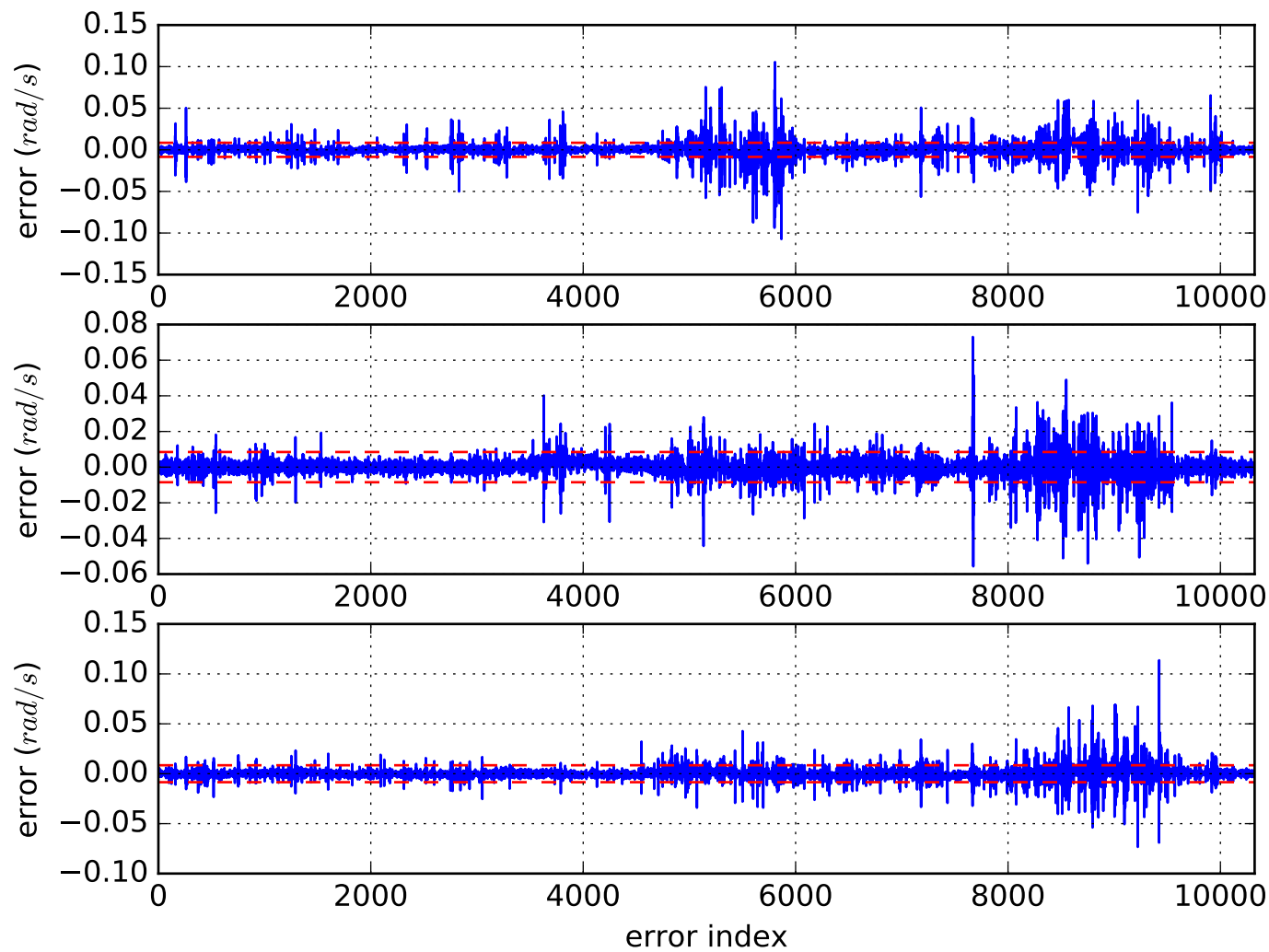
imu0: estimated accelerometer bias (imu frame)



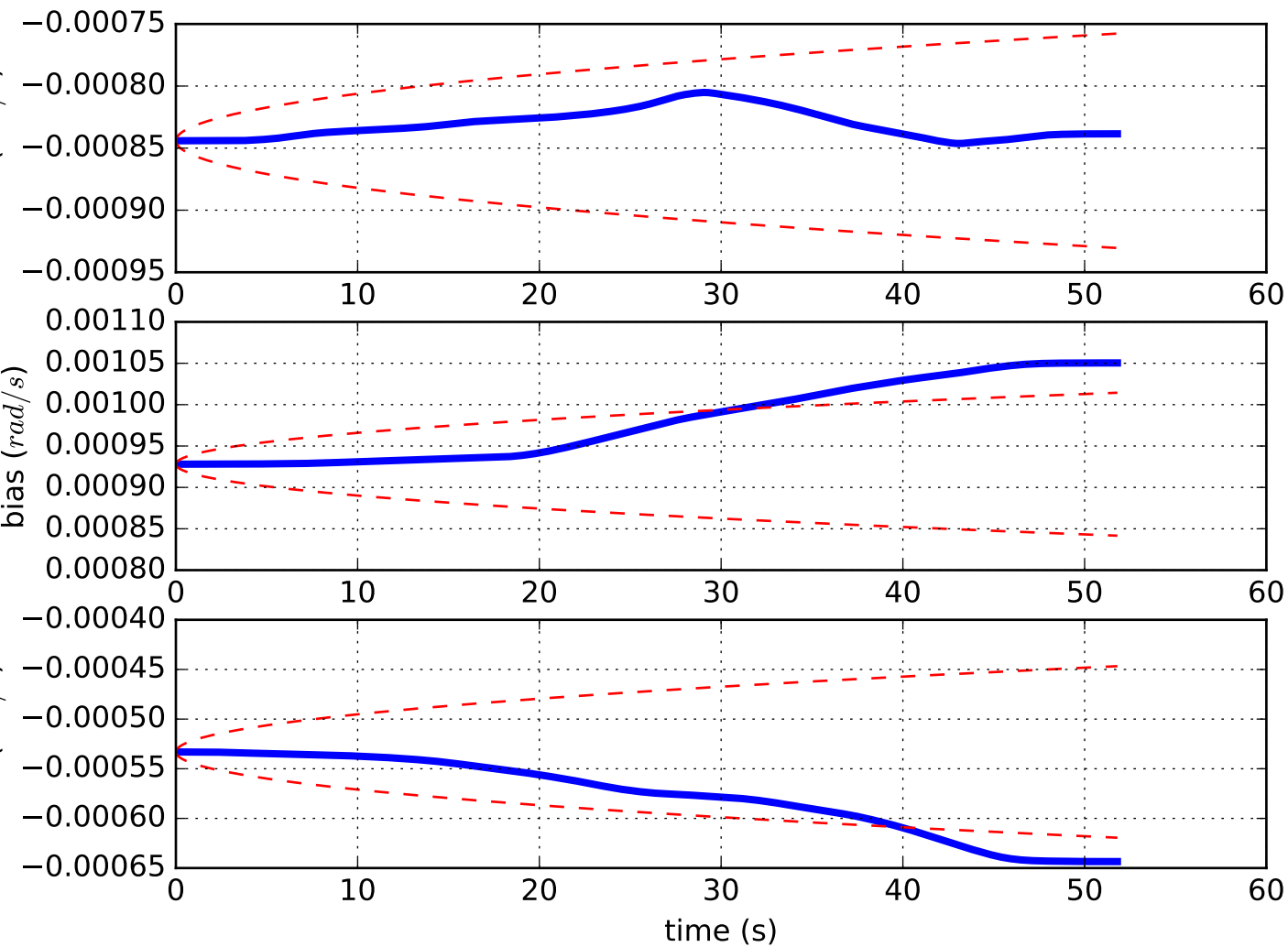
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

