

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.182980950098, median 0.165318609748, std: 0.109423748294

Gyroscope error (imu0): mean 0.20394967601, median 0.190095752004, std: 0.0963438292103

Accelerometer error (imu0): mean 0.277663963247, median 0.251732505566, std: 0.145959172731

Residuals

Reprojection error (cam0) [px]: mean 0.182980950098, median 0.165318609748, std: 0.109423748294

Gyroscope error (imu0) [rad/s]: mean 0.0144214198927, median 0.0134417995317, std: 0.00681253749601

Accelerometer error (imu0) [m/s²]: mean 0.0392676142606, median 0.0356003523462, std: 0.0206417441629

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.61606562 -0.78768985 0.00280182 -0.04436659]

[-0.00220823 -0.00528405 -0.9999836 0.15190292]

[0.78769174 0.61604933 -0.00499472 -0.08600827]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.61606562 -0.00220823 0.78769174 0.09541617]

[-0.78768985 -0.00528405 0.61604933 0.01884089]

[0.00280182 -0.9999836 -0.00499472 0.15159515]

[0. 0. 0. 1.]]

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

0.0154576942969

Gravity vector in target coords: [m/s²]

[-9.05039521 0.09891638 -3.77478279]

Calibration configuration

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cam0

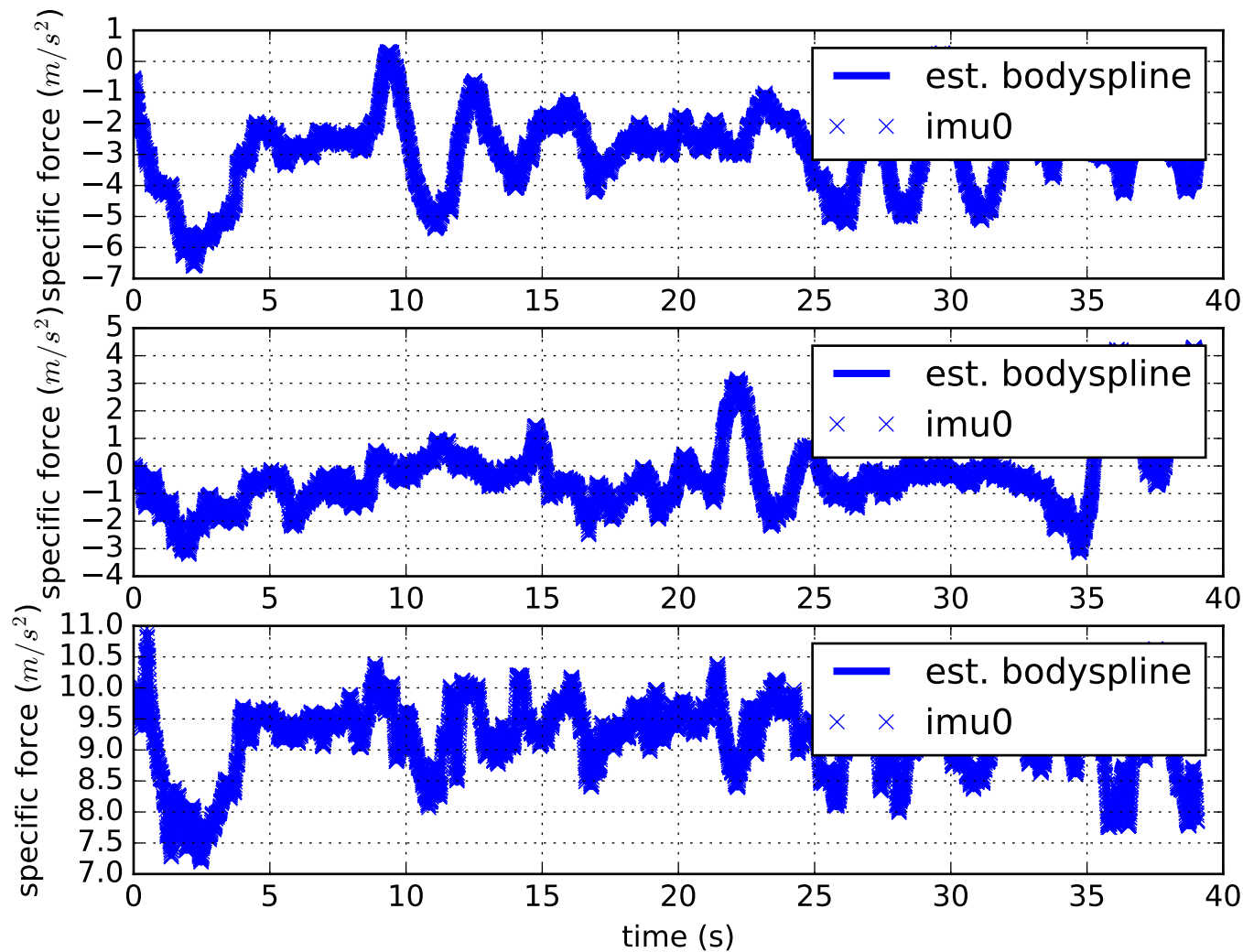
Camera model: pinhole
Focal length: [452.6416564260509, 452.213126942455]
Principal point: [488.0941449700269, 711.1994059219377]
Distortion model: radtan
Distortion coefficients: [0.009152445185112056, 0.0005041240997693242, 0.0010006756102934802, -0.011508903439889487]
Type: checkerboard
Rows
 Count: 7
 Distance: 0.06 [m]
Cols
 Count: 6
 Distance: 0.06 [m]

IMU configuration
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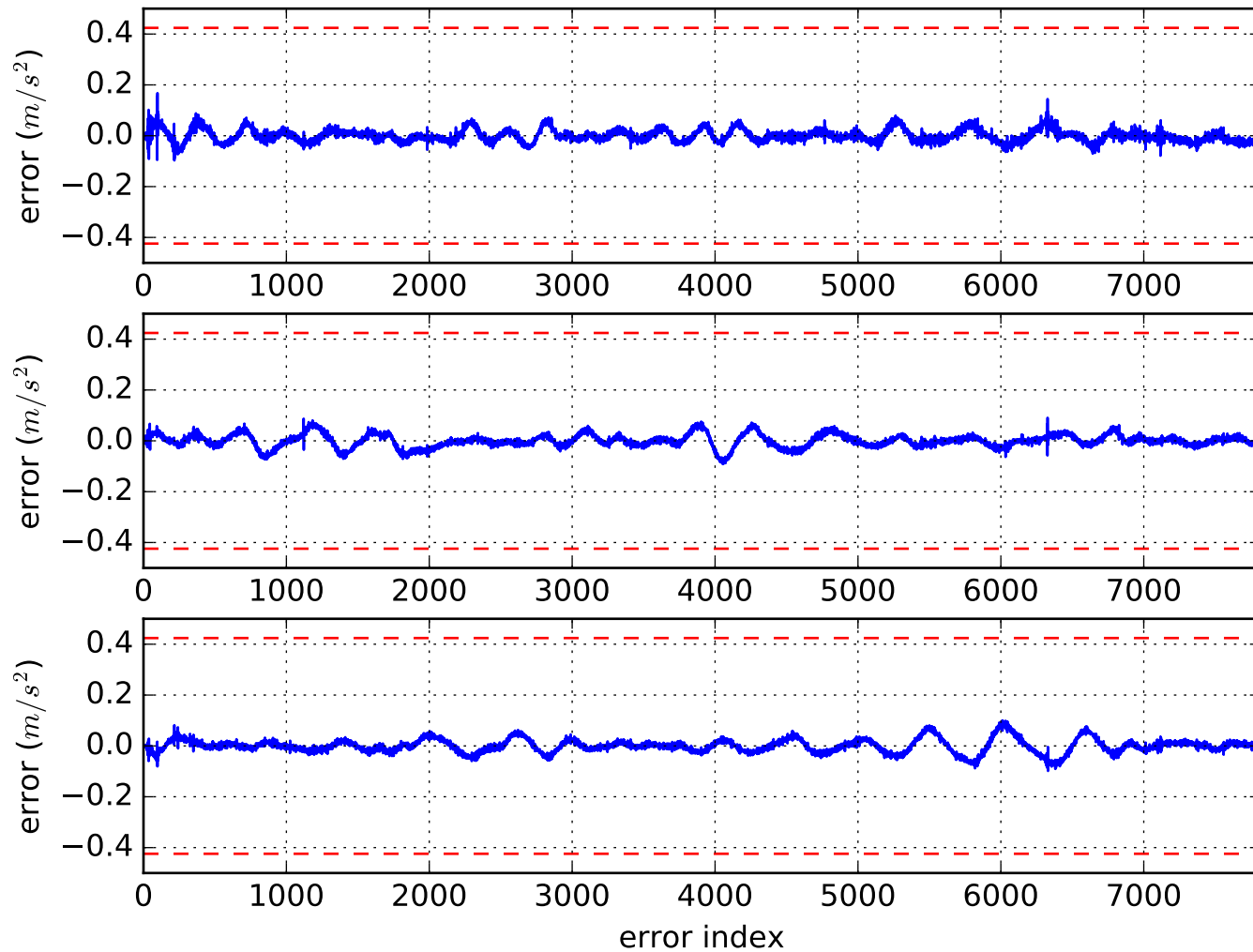
IMU0:

Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.01
 Noise density (discrete): 0.141421356237
 Random walk: 0.0002
Gyroscope:
 Noise density: 0.005
 Noise density (discrete): 0.0707106781187
 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]

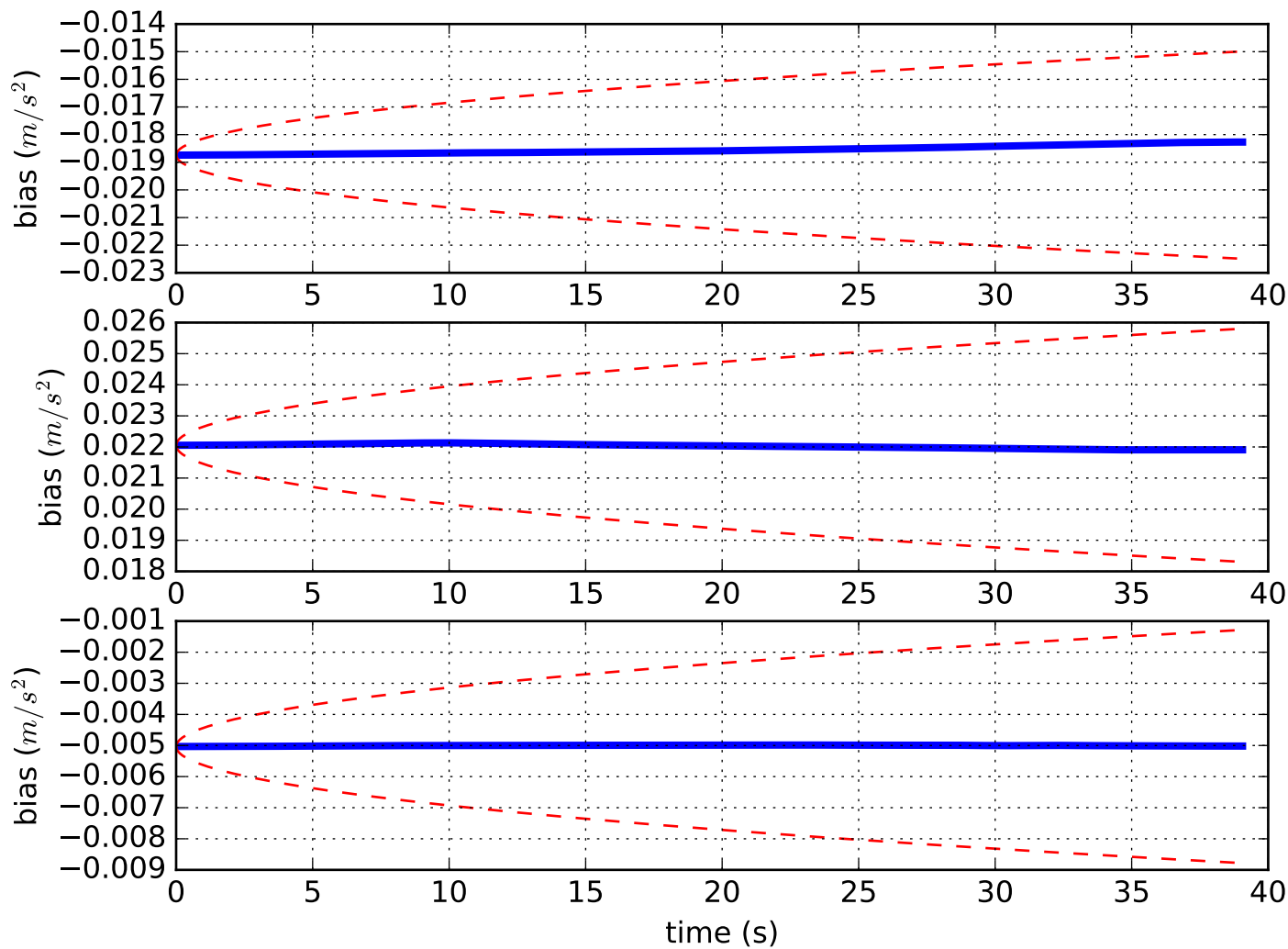
Comparison of predicted and measured specific force (imu0 frame)



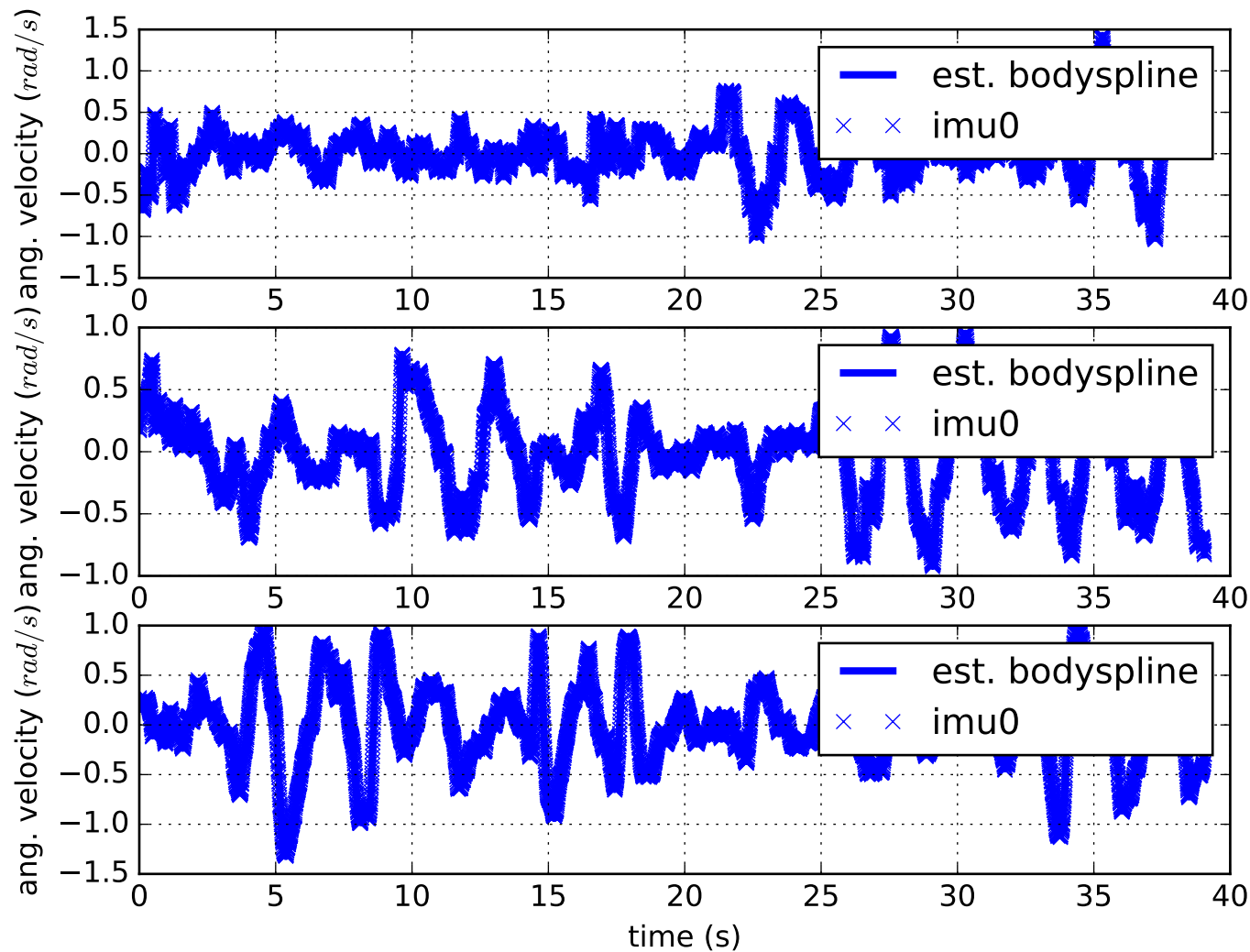
imu0: acceleration error



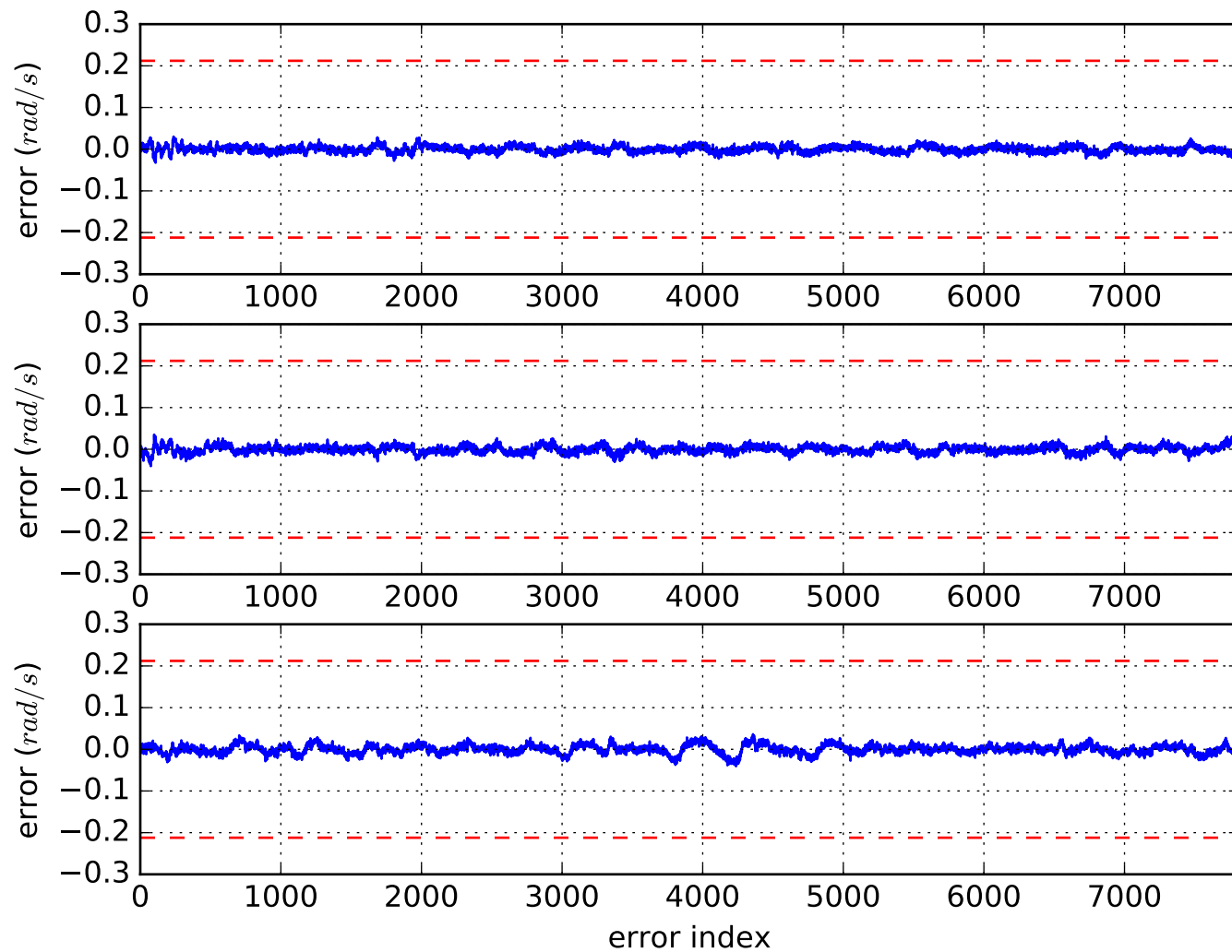
imu0: estimated accelerometer bias (imu frame)



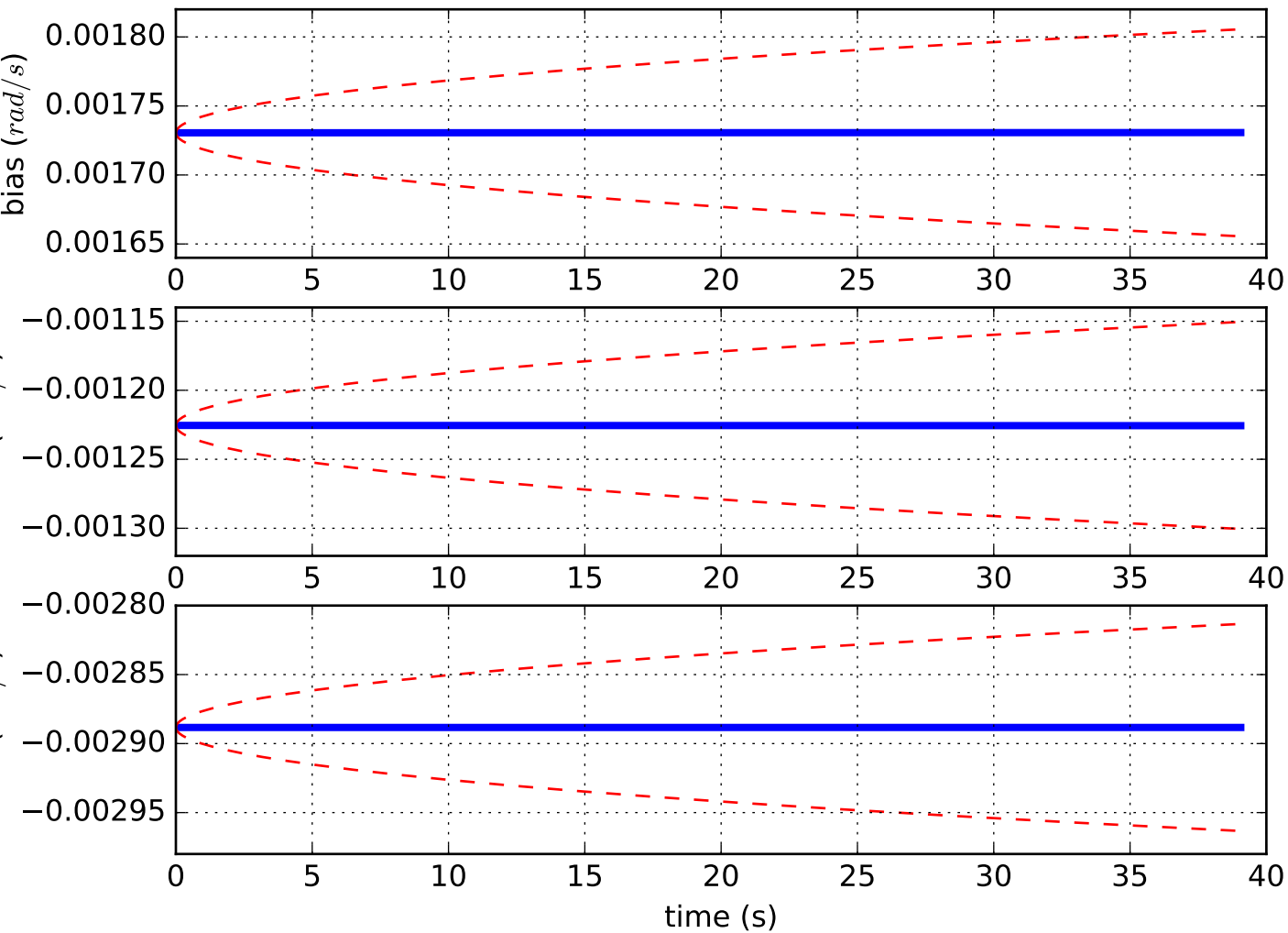
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

