

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.237882793403, median 0.20704159928, std: 0.14984749423

Gyroscope error (imu0): mean 0.133990039624, median 0.0989186131641, std: 0.108919385857

Accelerometer error (imu0): mean 0.475209047823, median 0.267036521662, std: 0.685089553542

Residuals

Reprojection error (cam0) [px]: mean 0.237882793403, median 0.20704159928, std: 0.14984749423

Gyroscope error (imu0) [rad/s]: mean 0.00947452656295, median 0.00699460221539, std: 0.0077017636342

Accelerometer error (imu0) [m/s²]: mean 0.0672047080394, median 0.0377646670583, std: 0.0968862938059

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.99989865 -0.00867233 0.01129115 0.05501367]

[-0.01102667 -0.02996205 -0.99949021 0.01308897]

[0.00900622 -0.99951341 0.02986338 -0.11810204]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.99989865 -0.01102667 0.00900622 0.05621607]

[-0.00867233 -0.02996205 -0.99951341 -0.11717531]

[0.01129115 -0.99949021 0.02986338 0.01598806]

[0. 0. 0. 1.]]

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

0.00414261421299

Gravity vector in target coords: [m/s²]

[-0.00731422 -9.52172659 -2.34629327]

Calibration configuration

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cam0

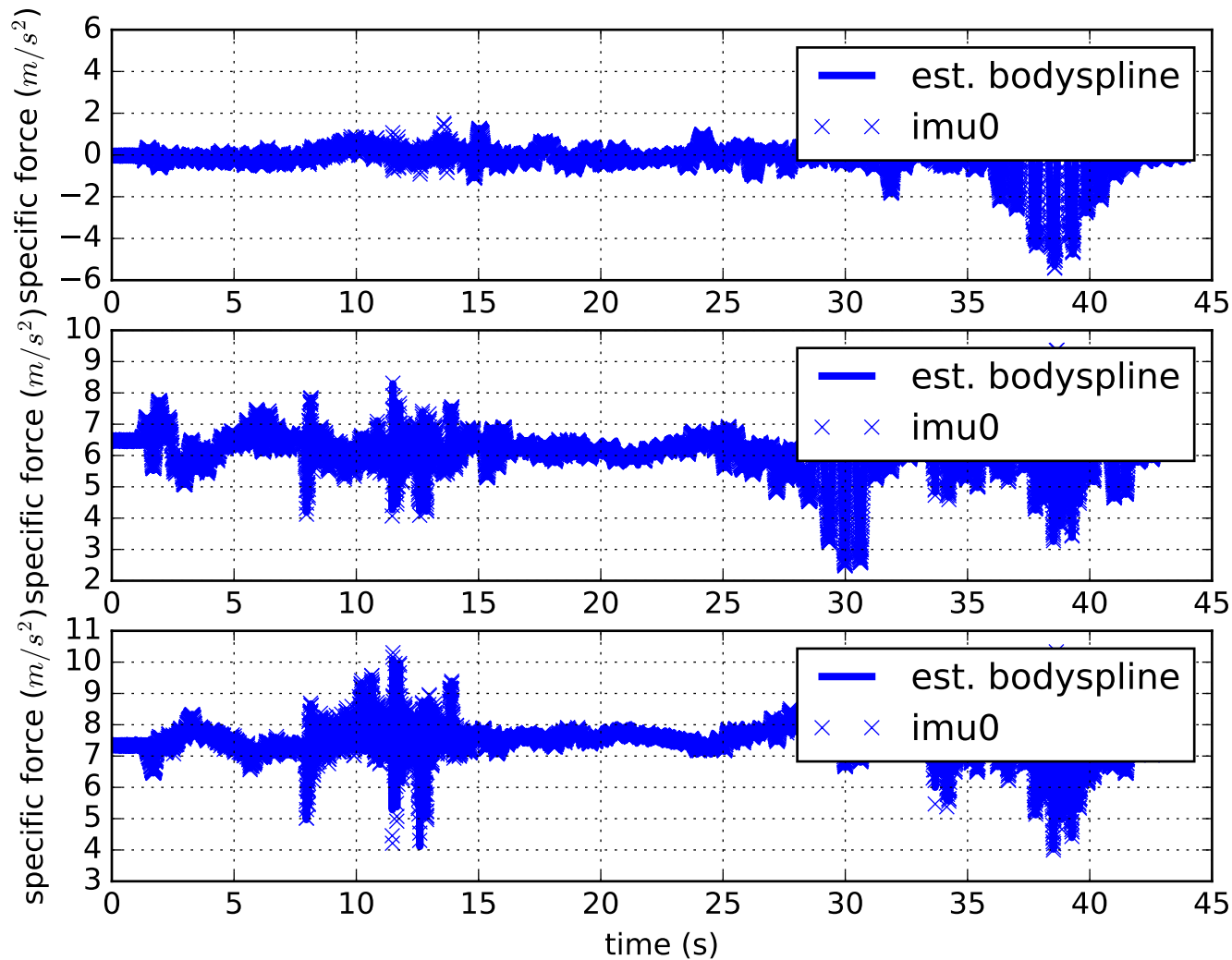
Camera model: pinhole
Focal length: [679.5951163793609, 686.2814030050388]
Principal point: [393.13467146176555, 205.73275622083634]
Distortion model: equidistant
Distortion coefficients: [0.4545486629370577, 0.5252236556754005, -4.112514935575864, 6.714651299988109]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.083 [m]
 Spacing 0.0249 [m]

IMU configuration
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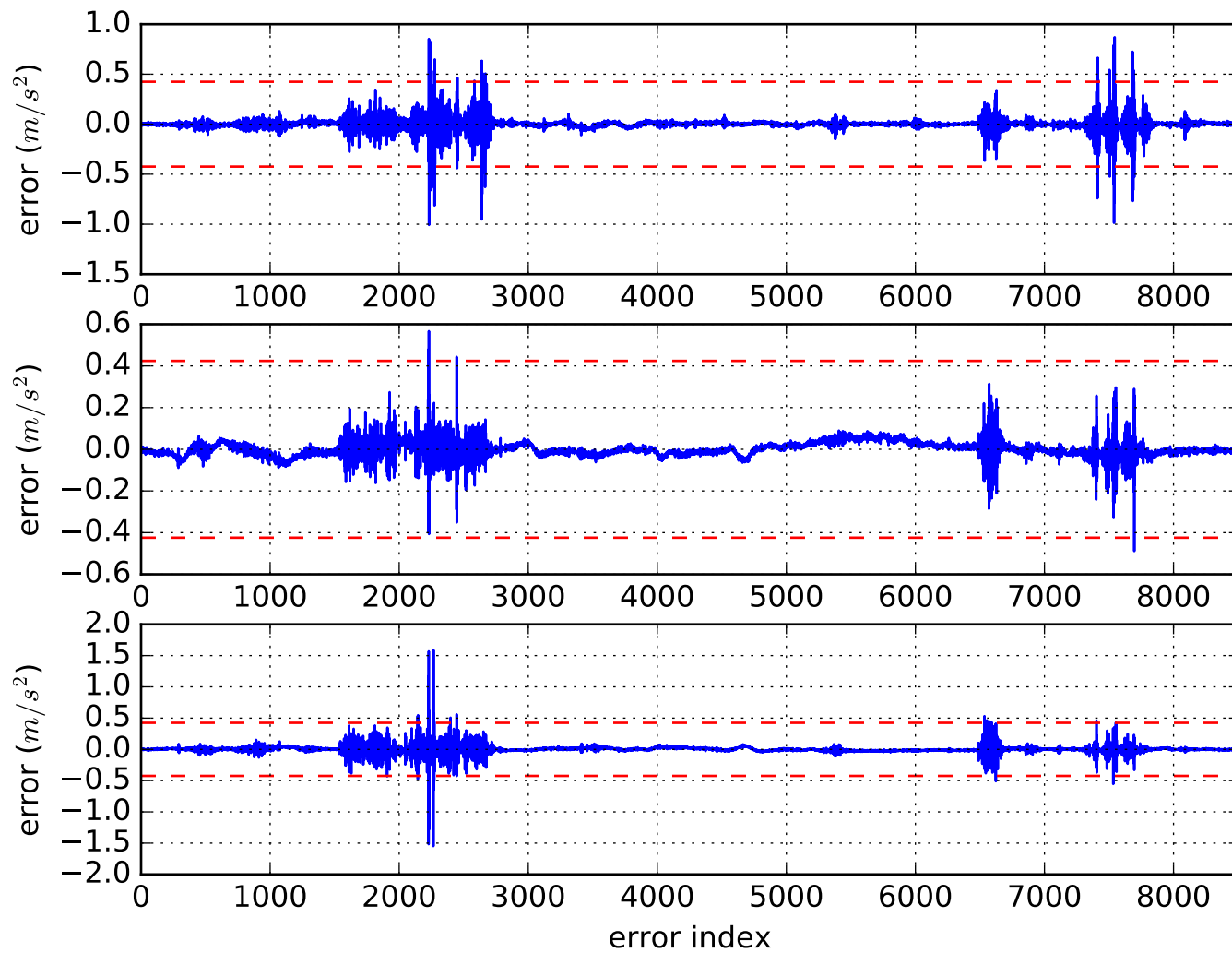
IMU0:

Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.01
 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]

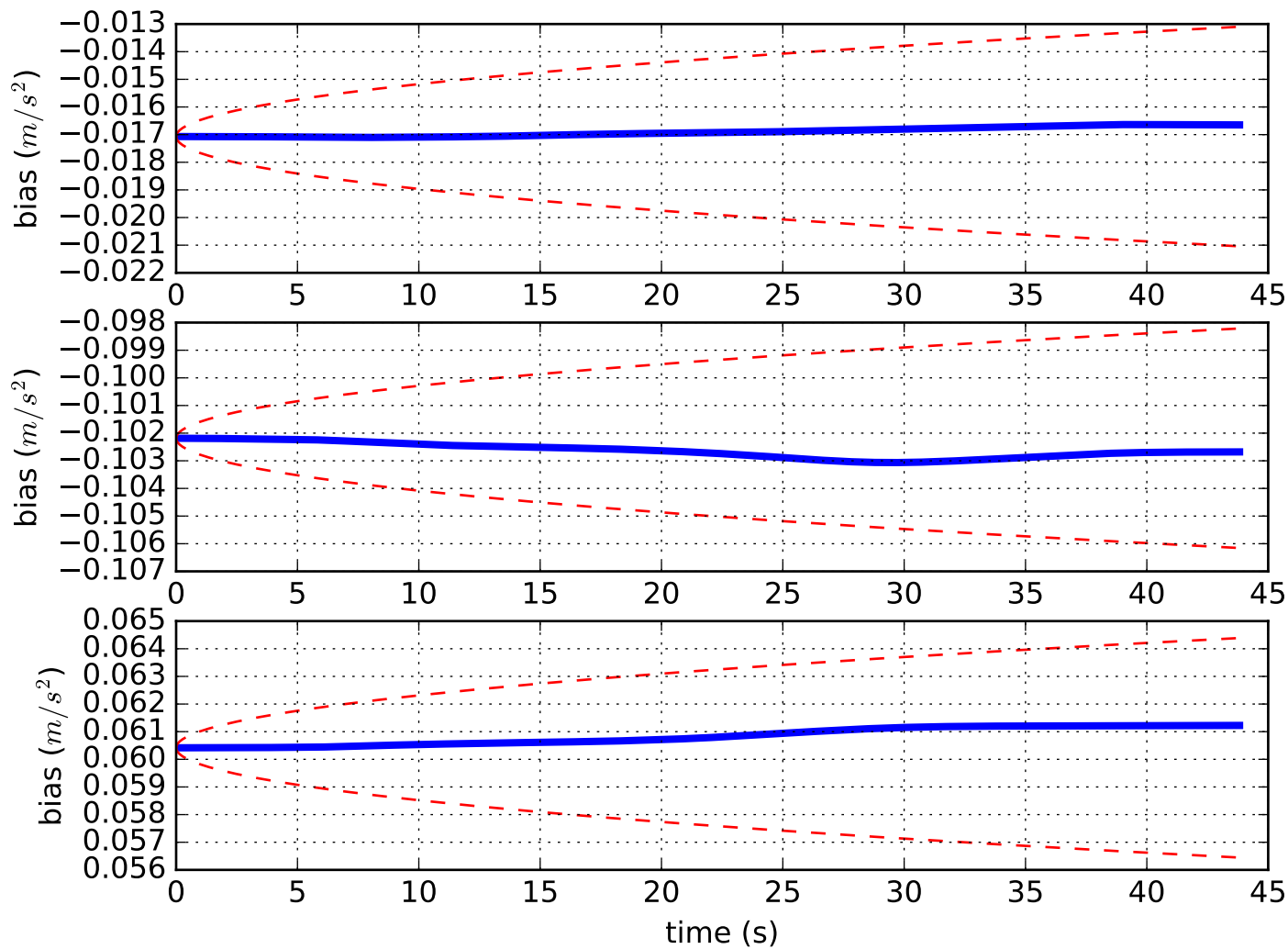
Comparison of predicted and measured specific force (imu0 frame)



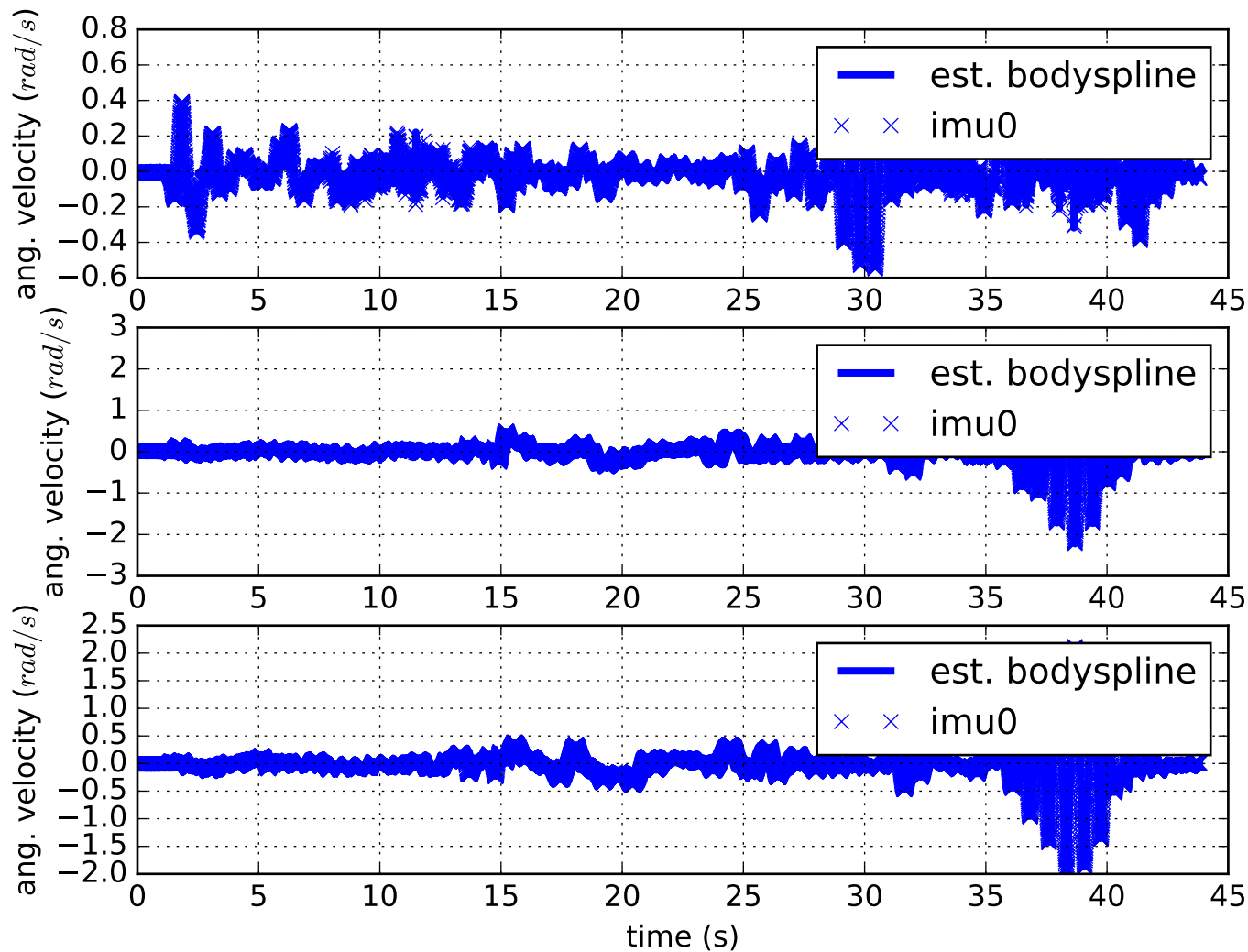
imu0: acceleration error



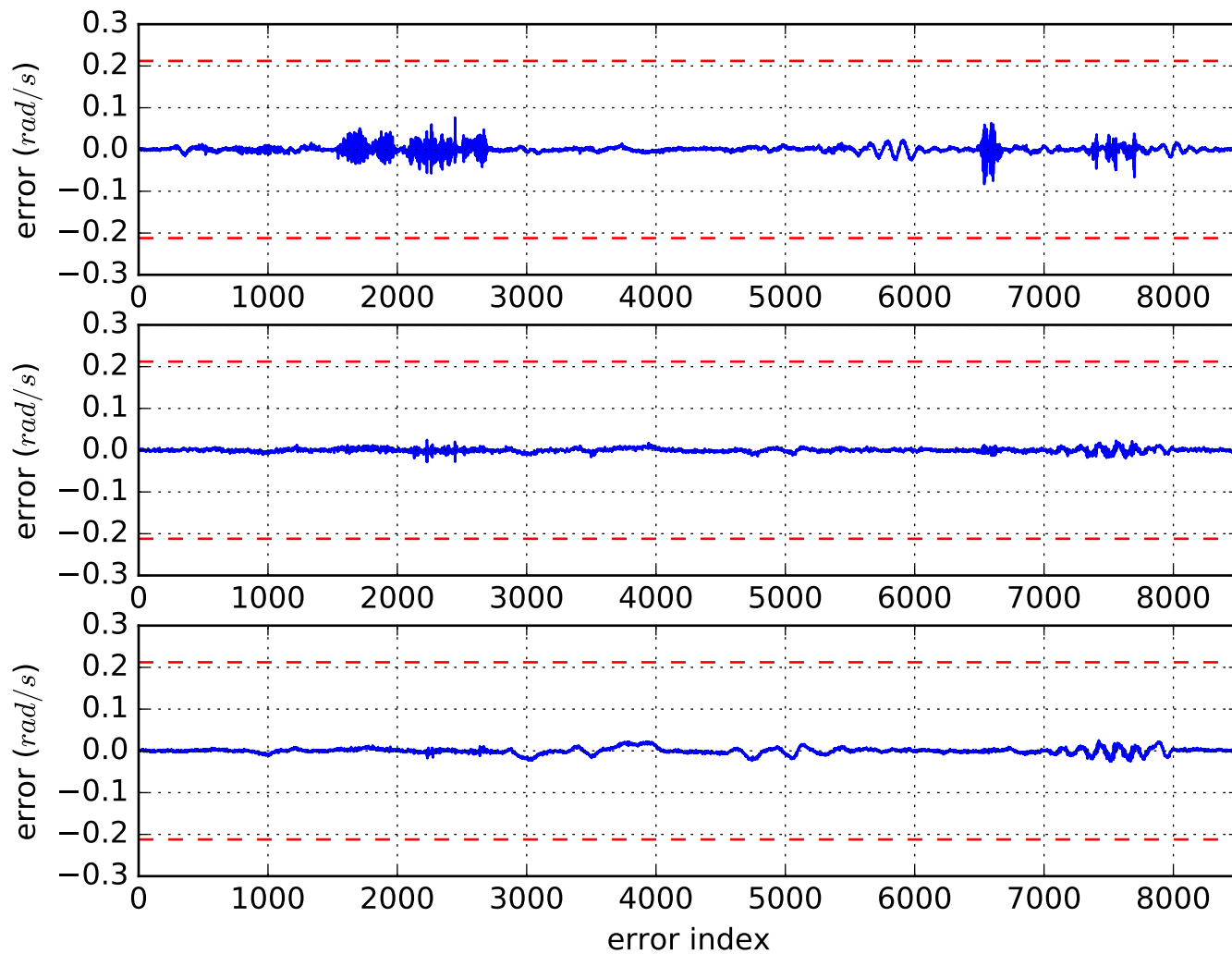
imu0: estimated accelerometer bias (imu frame)



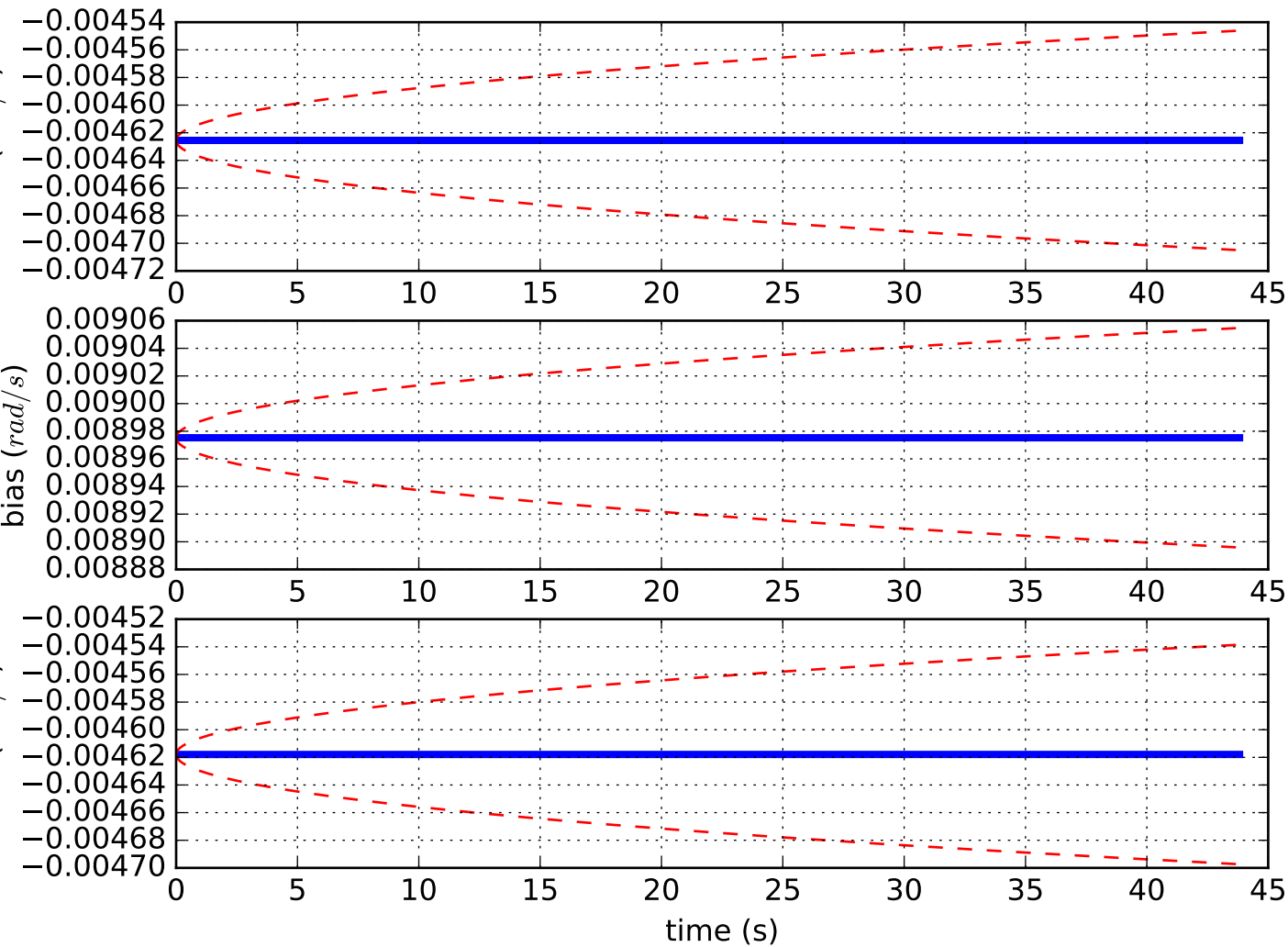
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

