

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.842986241267, median 0.782726024699, std: 0.466295066836

Gyroscope error (imu0): mean 0.0326756165416, median 0.025156756635, std: 0.0286444618068

Accelerometer error (imu0): mean 0.171252365942, median 0.132722797515, std: 0.156538200866

Residuals

Reprojection error (cam0) [px]: mean 0.842986241267, median 0.782726024699, std: 0.466295066836

Gyroscope error (imu0) [rad/s]: mean 0.00762285109988, median 0.005868786278, std: 0.00668242837626

Accelerometer error (imu0) [m/s²]: mean 0.0294984275738, median 0.0228616627183, std: 0.0269638948073

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.13250435 -0.99062376 -0.03327407 -0.00235024]

[-0.99109986 -0.13285193 0.00845224 -0.00086067]

[-0.01279351 0.03185797 -0.99941052 -0.00123348]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.13250435 -0.99109986 -0.01279351 -0.00055737]

[-0.99062376 -0.13285193 0.03185797 -0.00240325]

[-0.03327407 0.00845224 -0.99941052 -0.00130368]

[0. 0. 0. 1.]]

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

-0.217689574636

Gravity vector in target coords: [m/s²]

[-9.69494035 1.39232101 -0.48784902]

Calibration configuration

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cam0

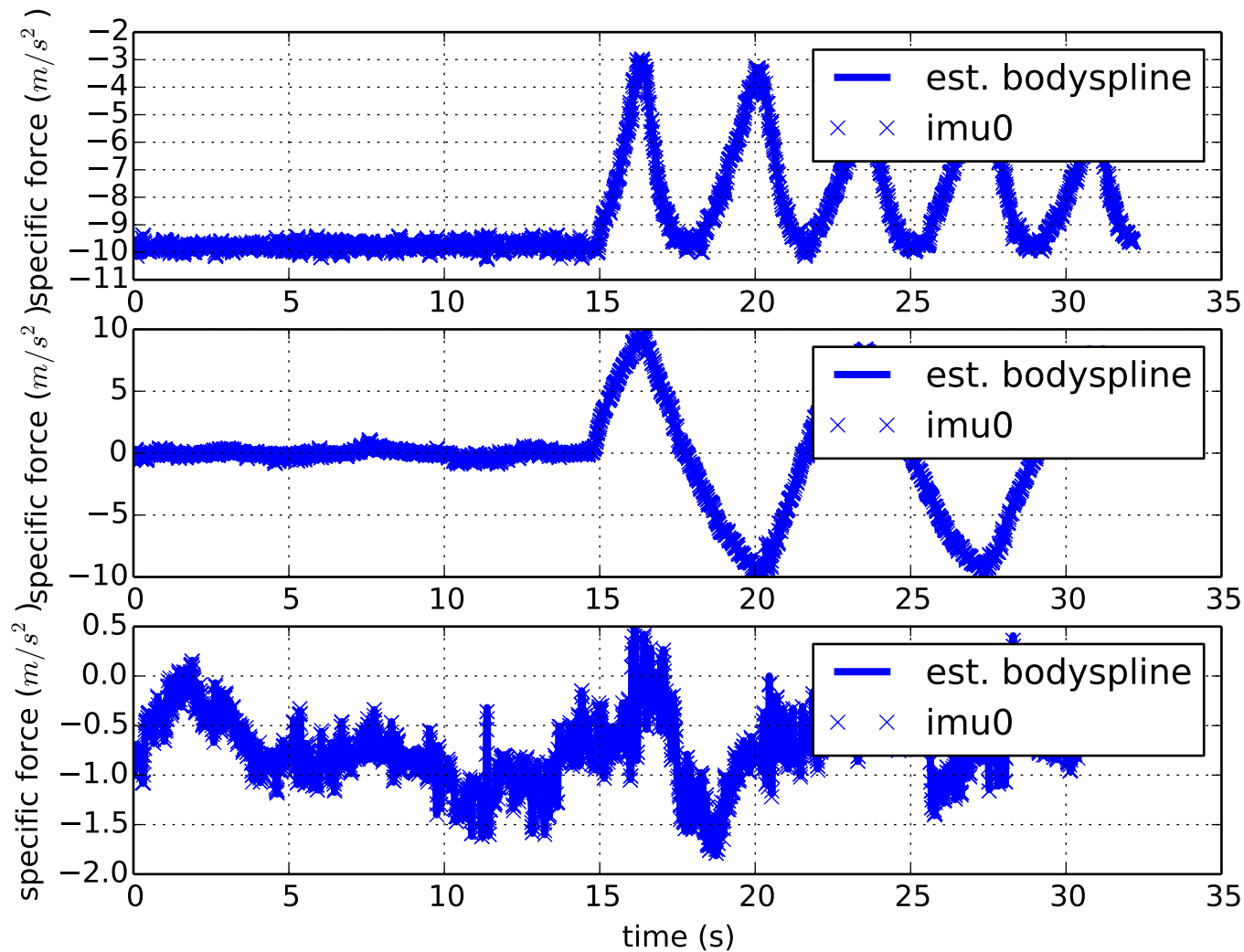
Camera model: pinhole
Focal length: [1630.9766307037223, 1625.4674003769571]
Principal point: [1020.0104969086332, 728.5052978036812]
Distortion model: radtan
Distortion coefficients: [0.16963340484182485, -0.3019364368457439, 0.001591358454564682, 0.0003766302702504667]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.024 [m]
 Spacing 0.00696 [m]

IMU configuration
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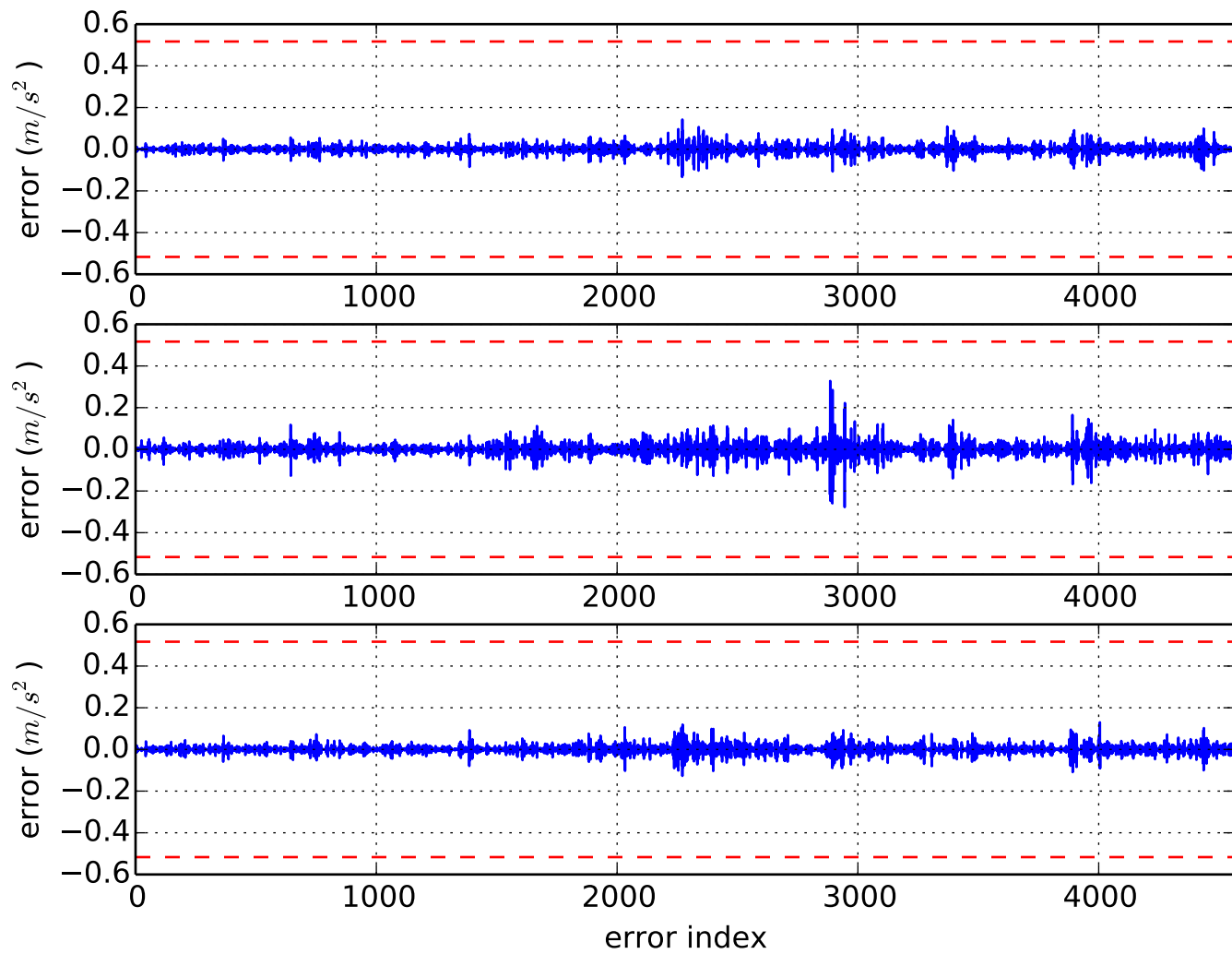
IMU0:

Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.01218
 Noise density (discrete): 0.172251211897
 Random walk: 0.000235
Gyroscope:
 Noise density: 0.016496
 Noise density (discrete): 0.233288669249
 Random walk: 2.3e-05
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]

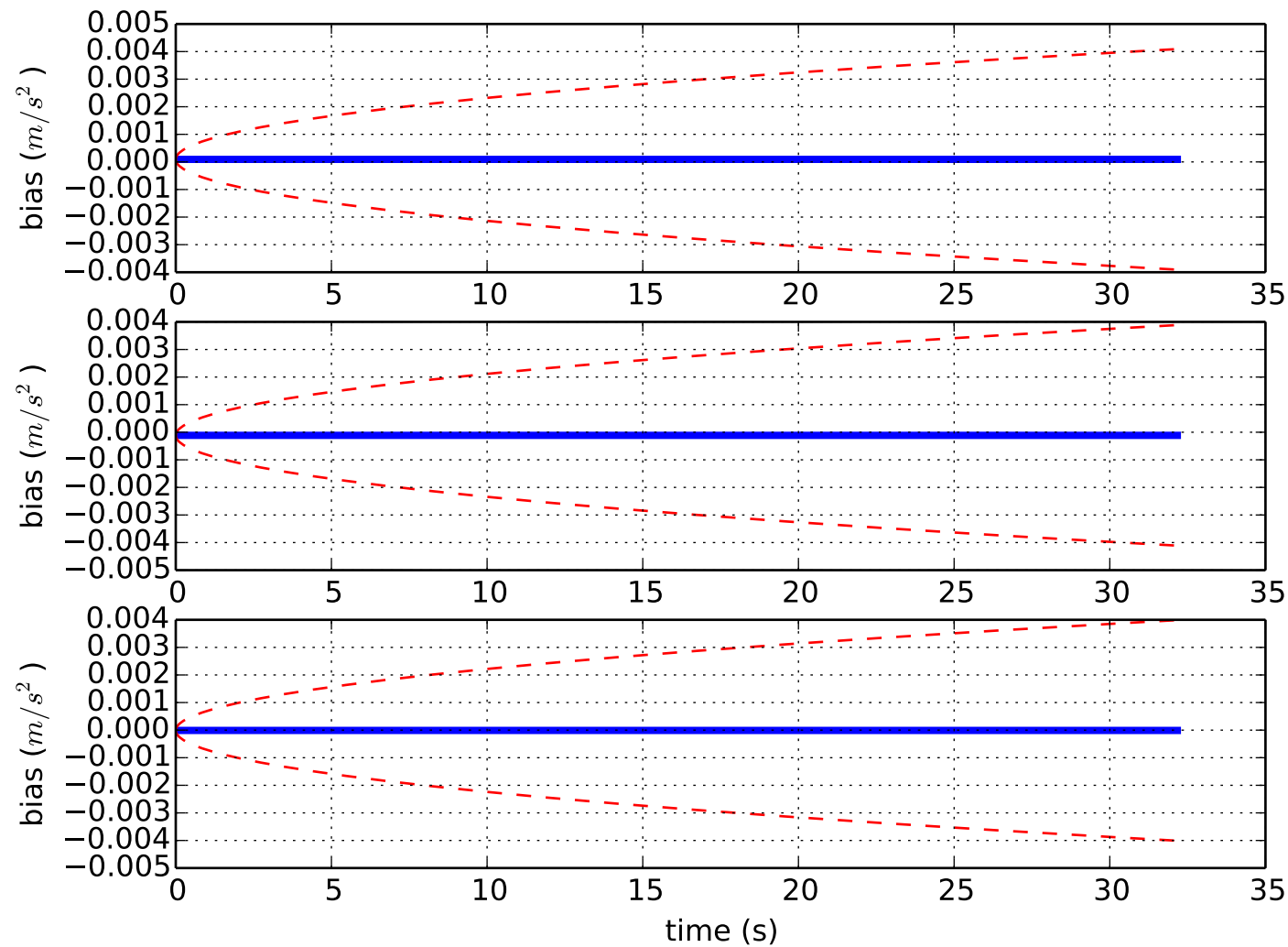
Comparison of predicted and measured specific force (imu0 frame)



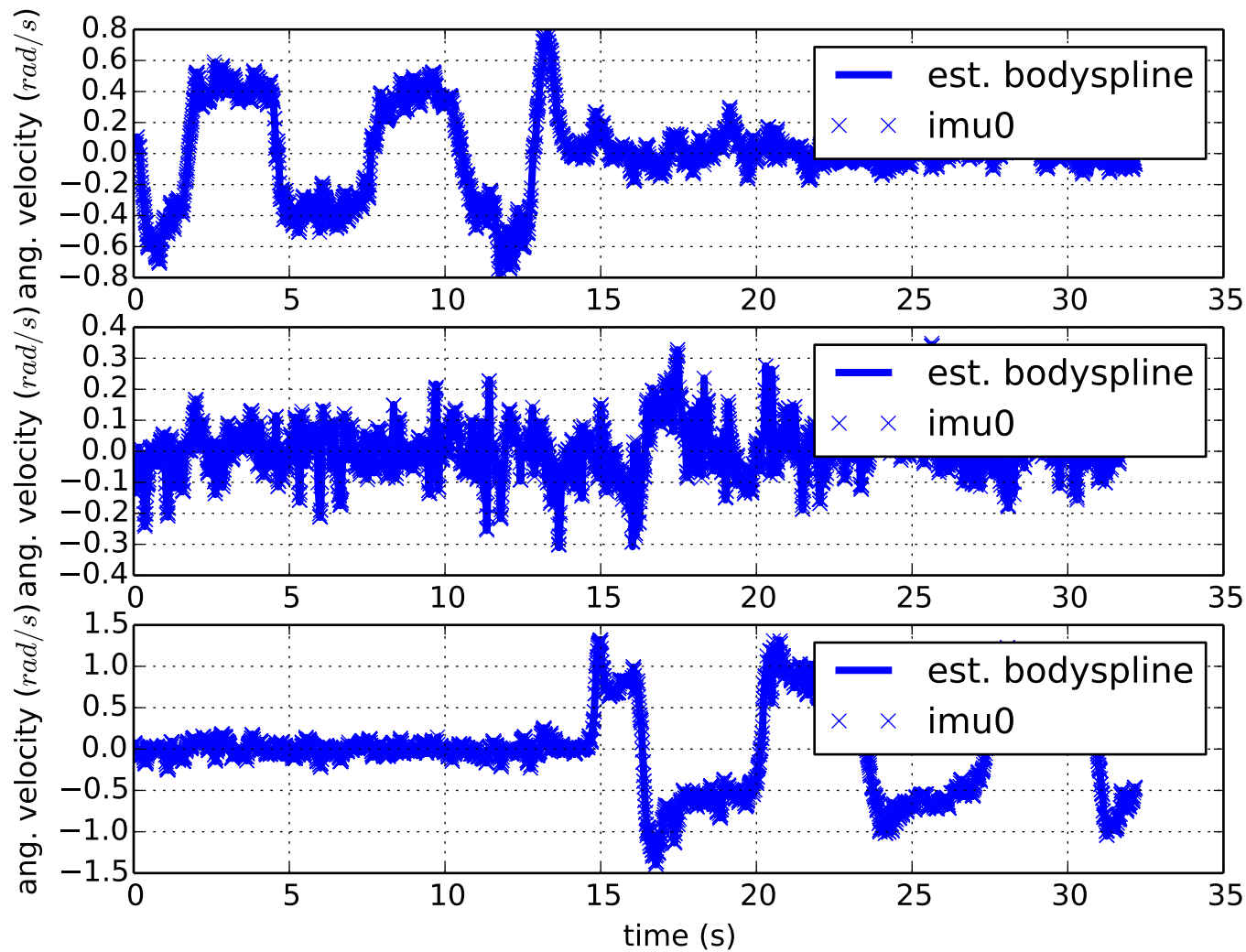
imu0: acceleration error



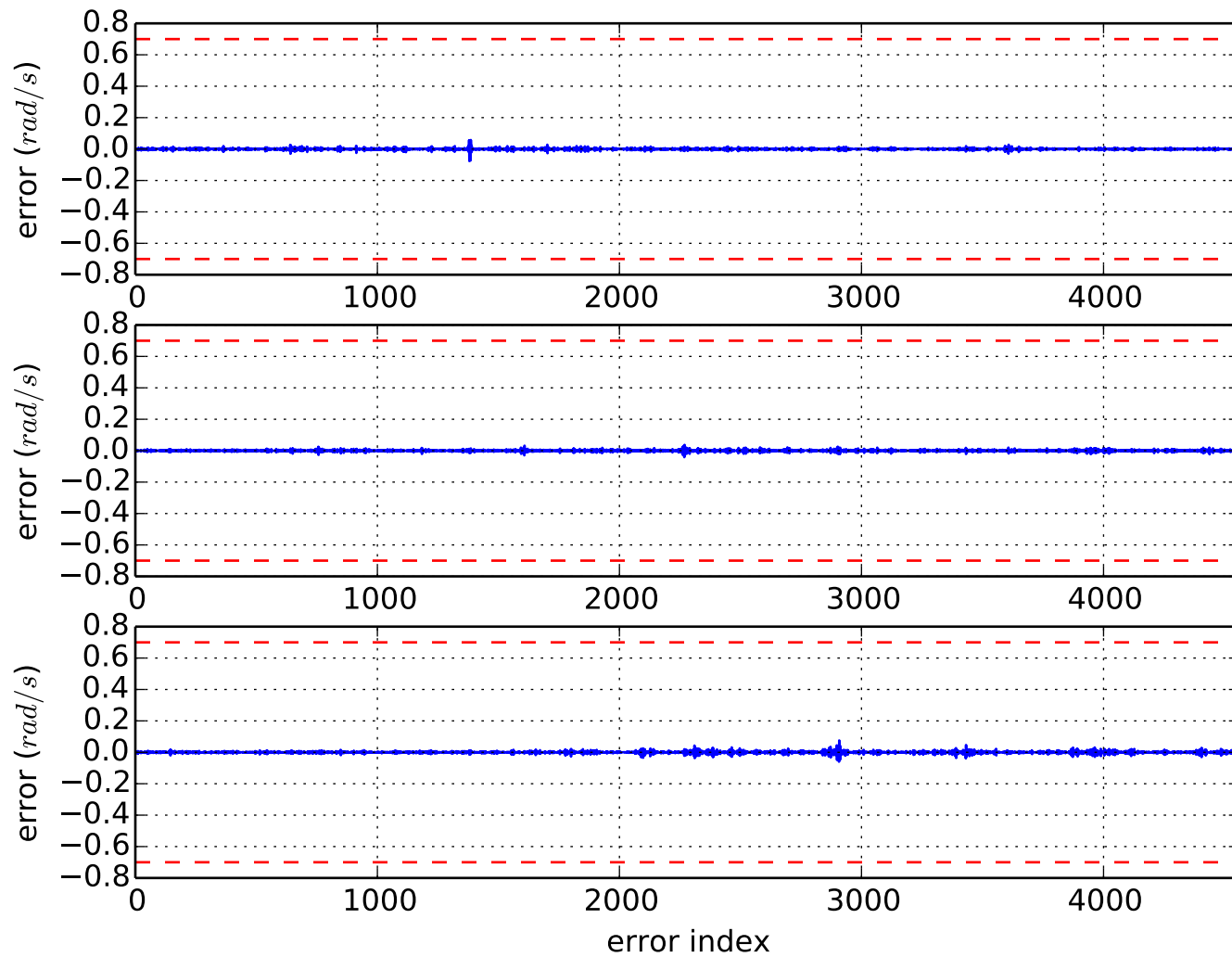
imu0: estimated accelerometer bias (imu frame)



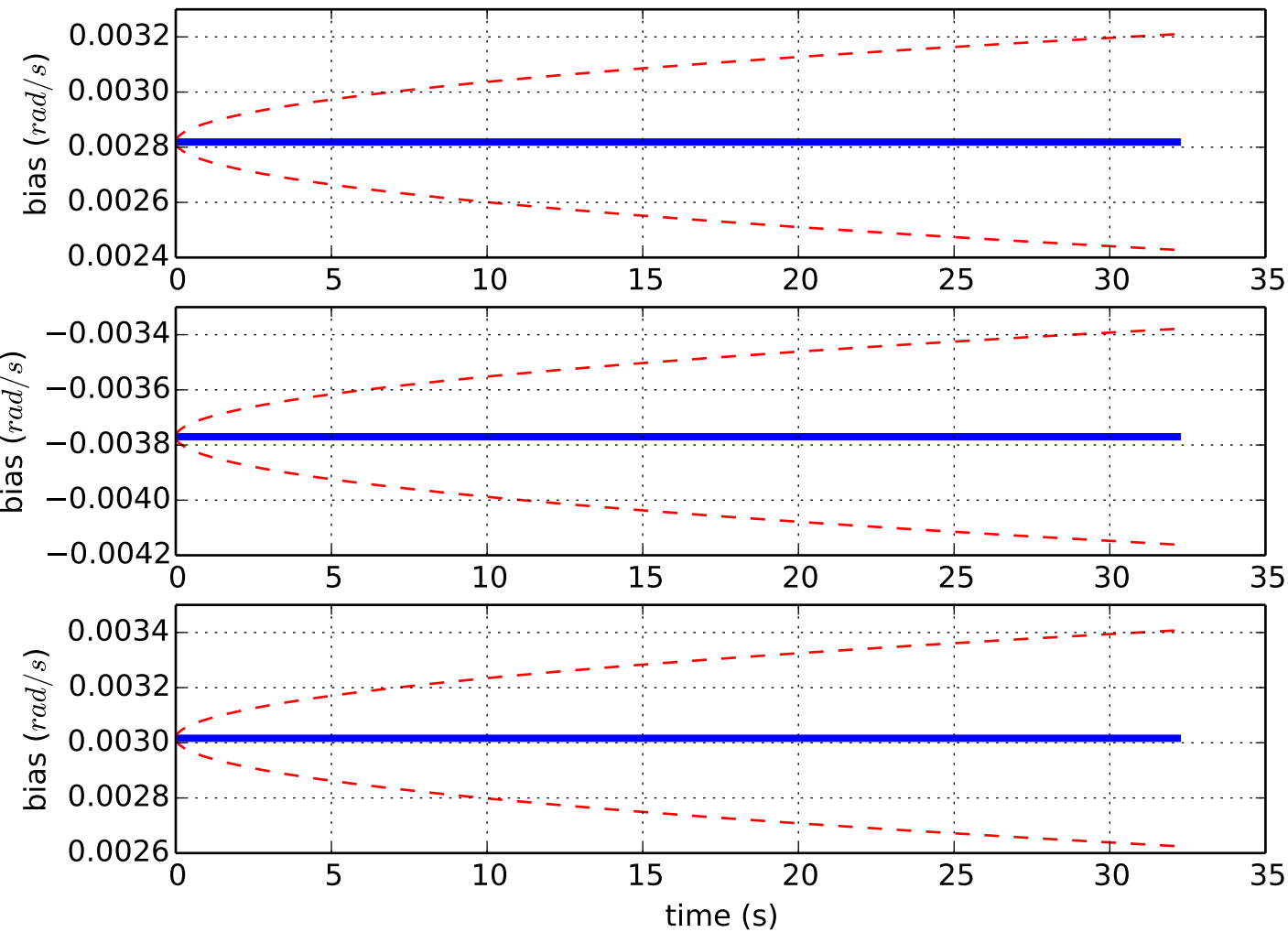
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

