

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.128036958734, median 0.104168105843, std: 0.0986528746551

Gyroscope error (imu0): mean 0.301793837502, median 0.198021319078, std: 0.299104236905

Accelerometer error (imu0): mean 0.296598684447, median 0.172798619599, std: 0.363051049295

Residuals

Reprojection error (cam0) [px]: mean 0.128036958734, median 0.104168105843, std: 0.0986528746551

Gyroscope error (imu0) [rad/s]: mean 0.0853601876073, median 0.056008887016, std: 0.0845994536789

Accelerometer error (imu0) [m/s^2]: mean 0.838907764253, median 0.488748302794, std: 1.02686343549

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.9994589 -0.01134809 -0.03087284 0.00312703]
[-0.03084105 -0.00296589 0.9995199 0.02114647]
[-0.01143421 0.99993121 0.0026143 -0.03049281]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.9994589 -0.03084105 -0.01143421 0.00342886]
[-0.01134809 -0.00296589 0.99993121 0.03058892]
[-0.03087284 0.9995199 0.0026143 -0.02096006]
[0. 0. 0. 1.]]

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

-0.0223762208508

Gravity vector in target coords: [m/s^2]

[-0.08683308 -9.79844261 -0.38910826]

Calibration configuration

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cam0

Camera model: omni
Focal length: [5756.453859322548, 5757.9543874402825]
Principal point: [392.043658138653, 259.14796601551024]
Omni xi: 9.44181443462
Distortion model: radtan
Distortion coefficients: [-1.7703247064868977, -112.89277859851285, 0.008395793203591488, -0.006651134868781253]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.025 [m]
 Spacing 0.0075 [m]

IMU configuration

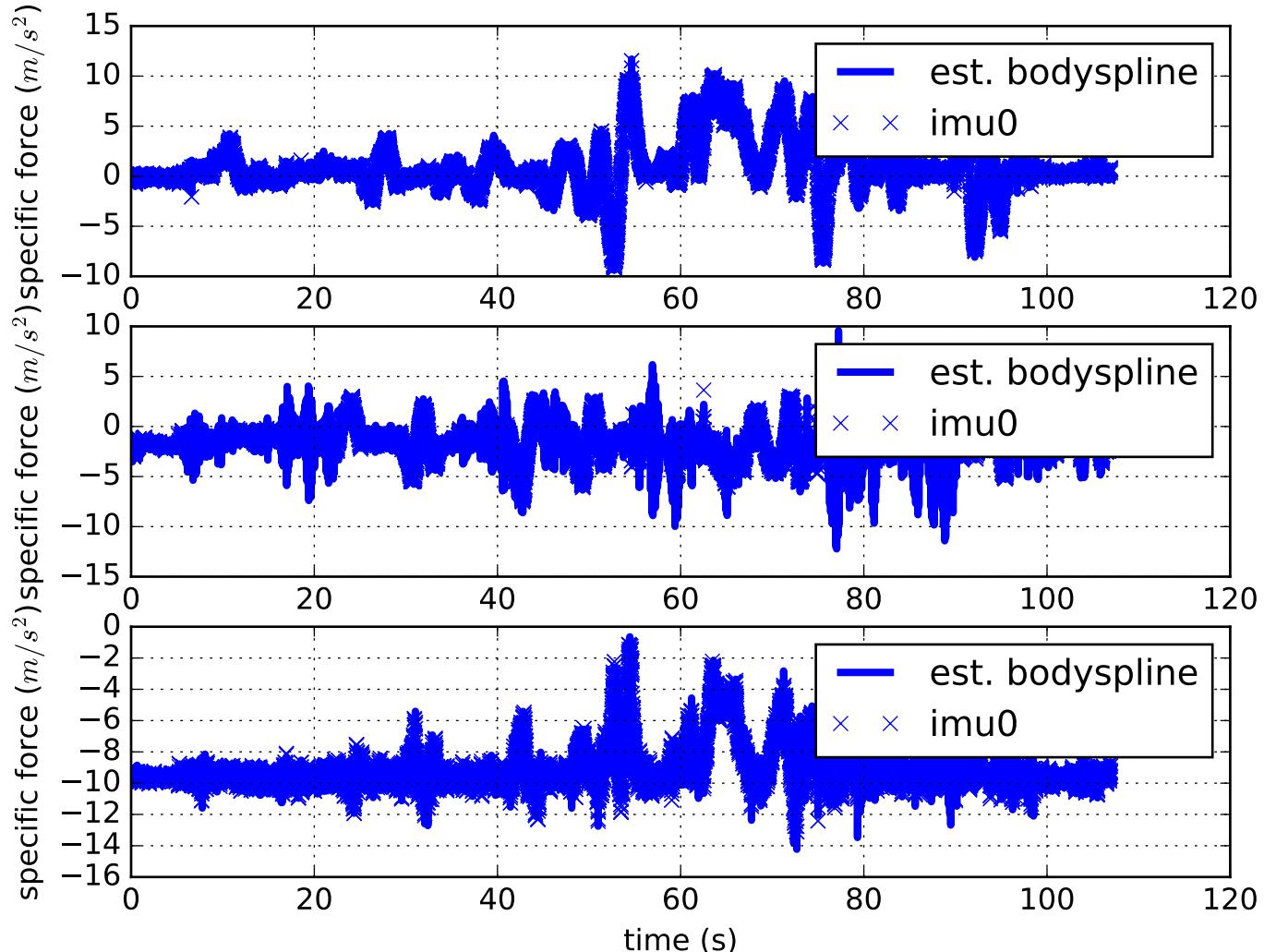
IMU0:

Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.2
 Noise density (discrete): 2.82842712475
 Random walk: 0.002
Gyroscope:
 Noise density: 0.02
 Noise density (discrete): 0.282842712475
 Random walk: 0.0002

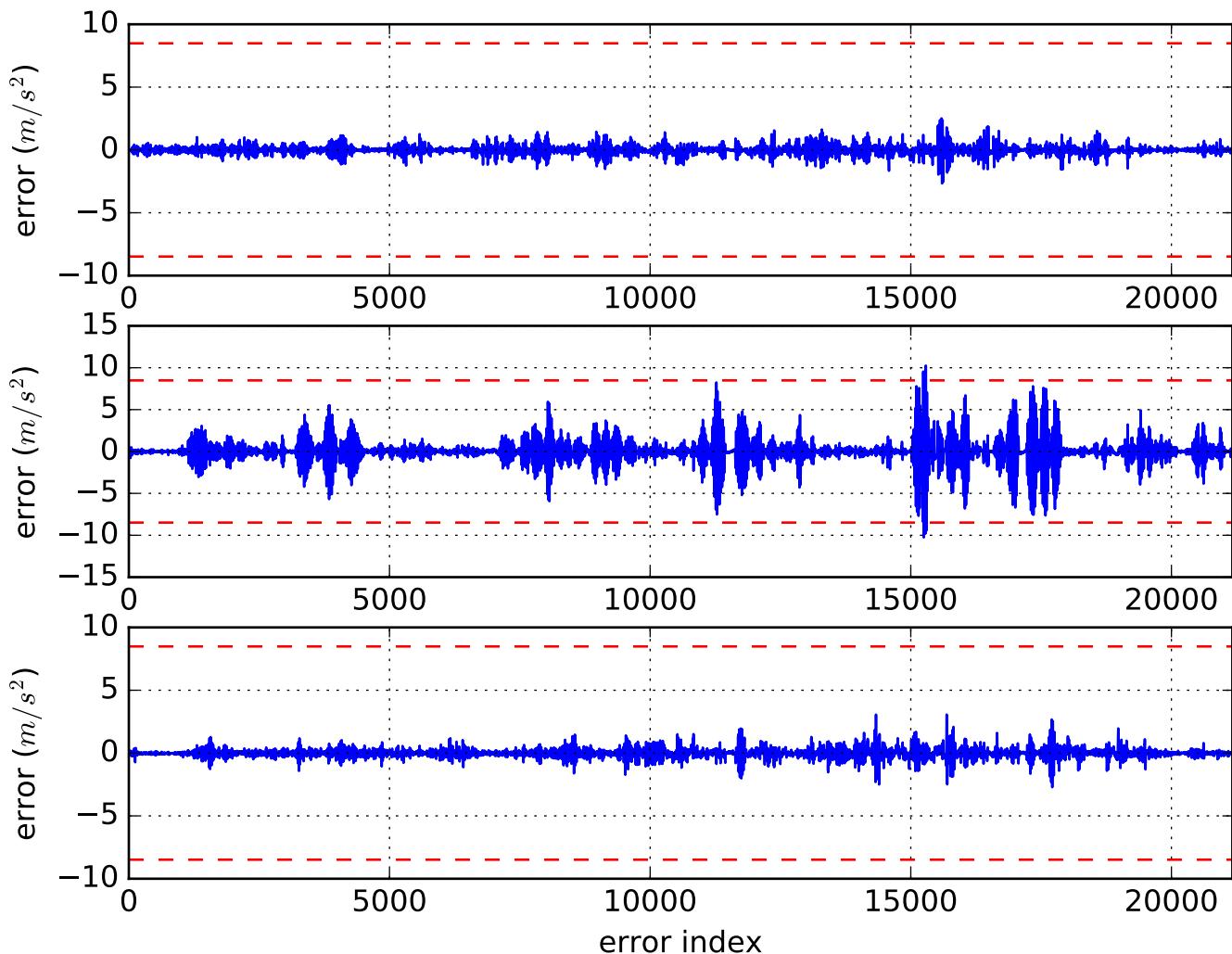
T_i_b
[[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

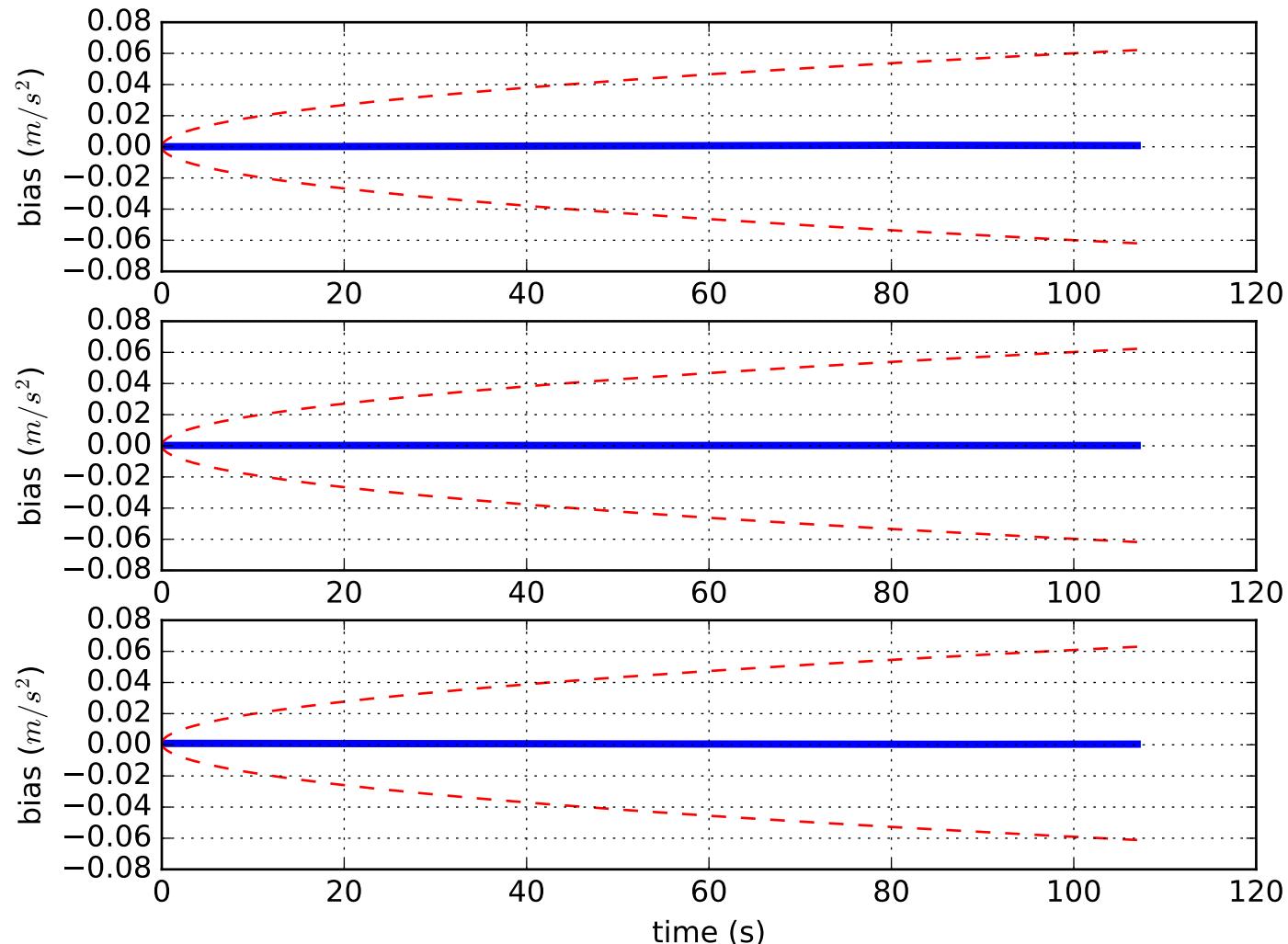
Comparison of predicted and measured specific force (imu0 frame)



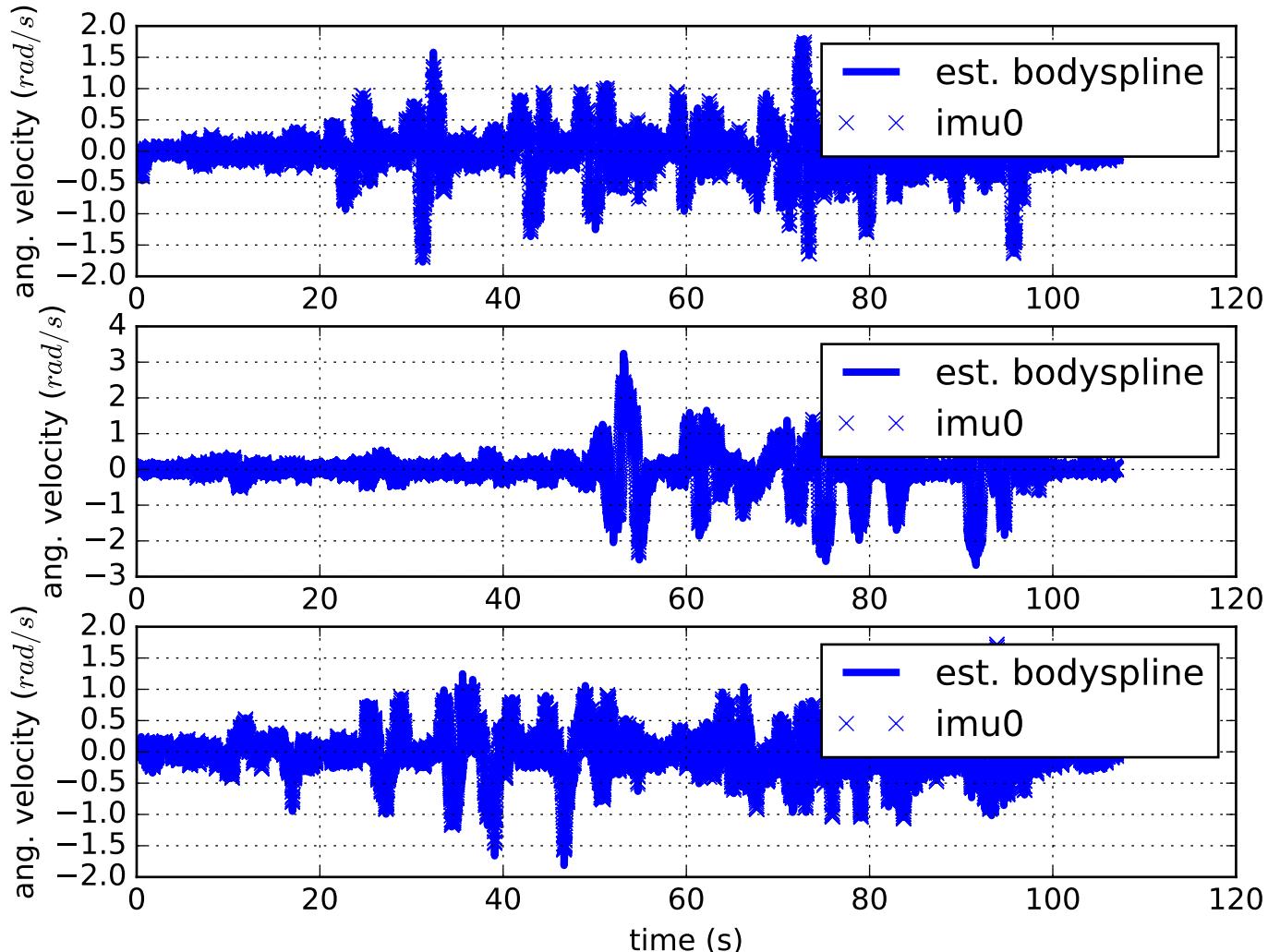
imu0: acceleration error



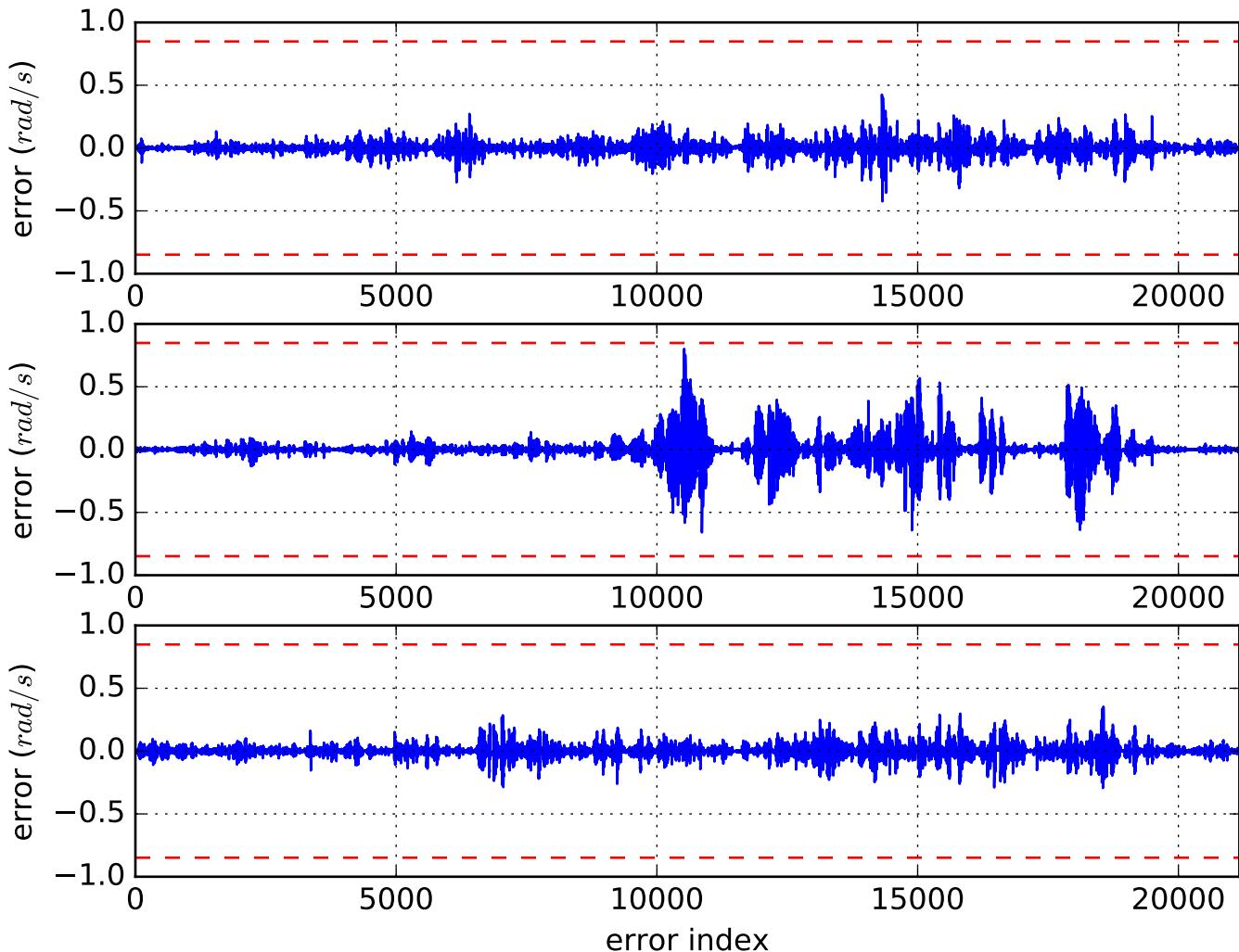
imu0: estimated accelerometer bias (imu frame)



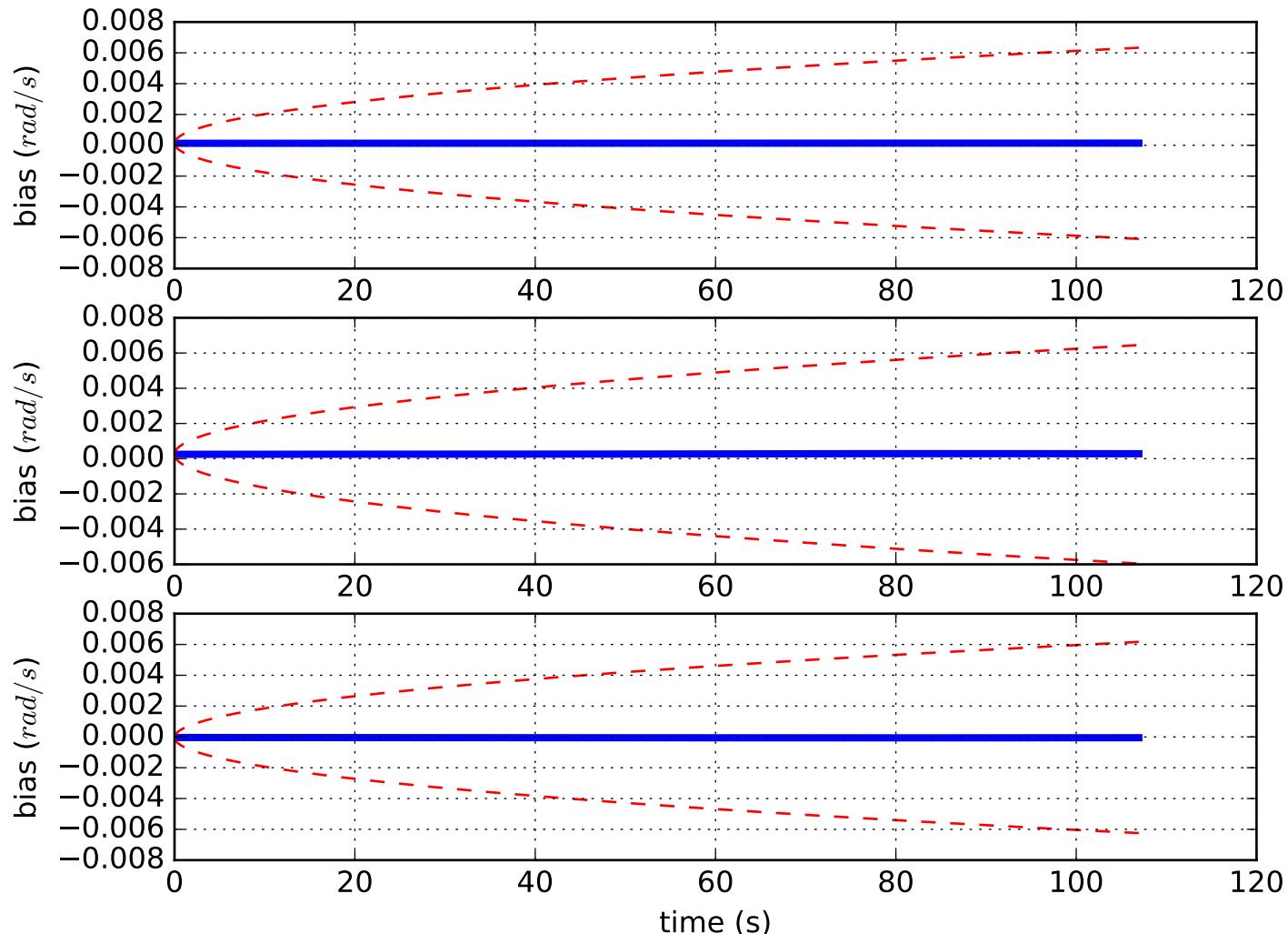
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

