

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 2.81276858613, median 2.32526904476, std: 1.9721988423
Gyroscope error (imu0): mean 3.15831075214, median 2.32875953033, std: 2.66288414331
Accelerometer error (imu0): mean 6.2813583048, median 3.95178332283, std: 6.58220941829

Residuals

Reprojection error (cam0) [px]: mean 2.81276858613, median 2.32526904476, std: 1.9721988423
Gyroscope error (imu0) [rad/s]: mean 0.223326294993, median 0.164668165565, std: 0.188294343525
Accelerometer error (imu0) [m/s²]: mean 0.888318210477, median 0.55886655707, std: 0.930864982973

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[-0.97166907  0.06838402  0.22623625 -0.10022525]
 [-0.21395734  0.15214765 -0.96492142  0.0088888 ]
 [-0.10040652 -0.98598921 -0.1332059  0.40897504]
 [ 0.          0.          0.          1.        ]]
```

T_ic: (cam0 to imu0):

```
[[-0.97166907 -0.21395734 -0.10040652 -0.05442019]
 [ 0.06838402  0.15214765 -0.98598921  0.40874637]
 [ 0.22623625 -0.96492142 -0.1332059  0.08572946]
 [ 0.          0.          0.          1.        ]]
```

timeshift cam0 to imu0: [s] ($t_{imu} = t_{cam} + \text{shift}$)

-0.0920722908148

Gravity vector in target coords: [m/s²]

[-2.2358333 -9.53787533 -0.44542851]

Calibration configuration

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cam0

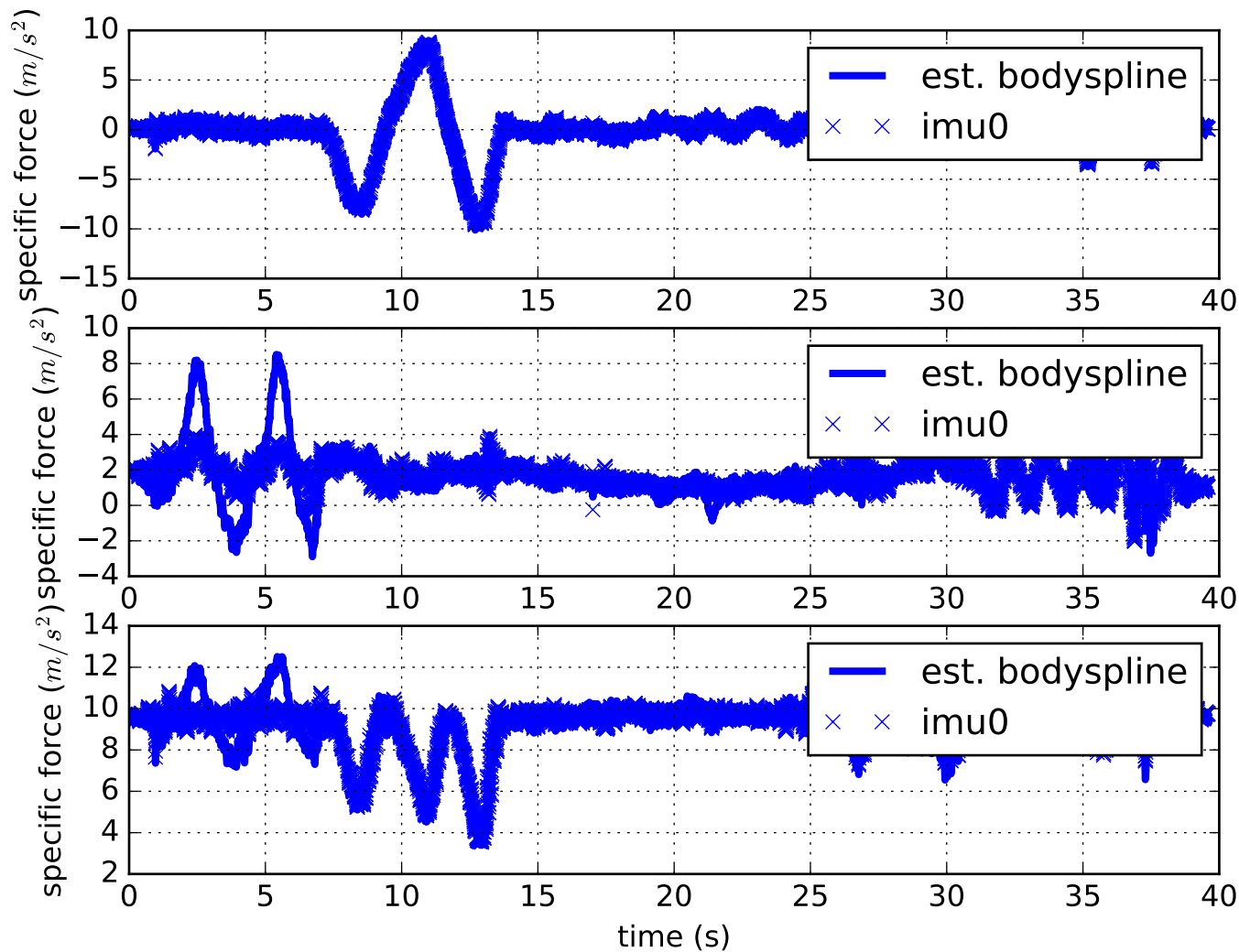
Camera model: pinhole
Focal length: [2161.3395074156847, 2190.920827821171]
Principal point: [325.8861977646777, 323.8297982783892]
Distortion model: equidistant
Distortion coefficients: [18.565119463127647, -2681.9977003495283, 199980.65529909782, -4717066.369676423]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.083 [m]
 Spacing 0.0249 [m]

IMU configuration
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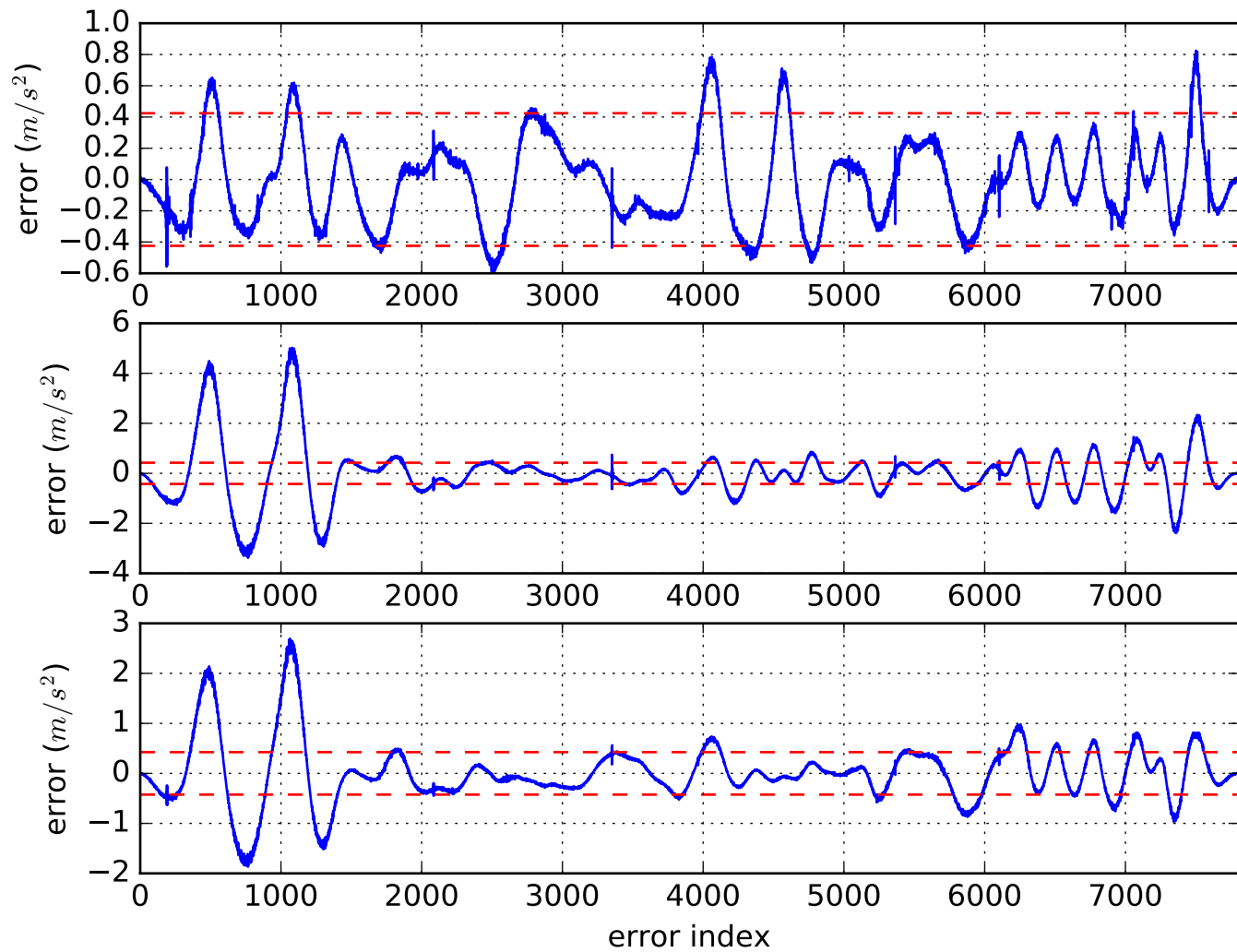
IMU0:

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]

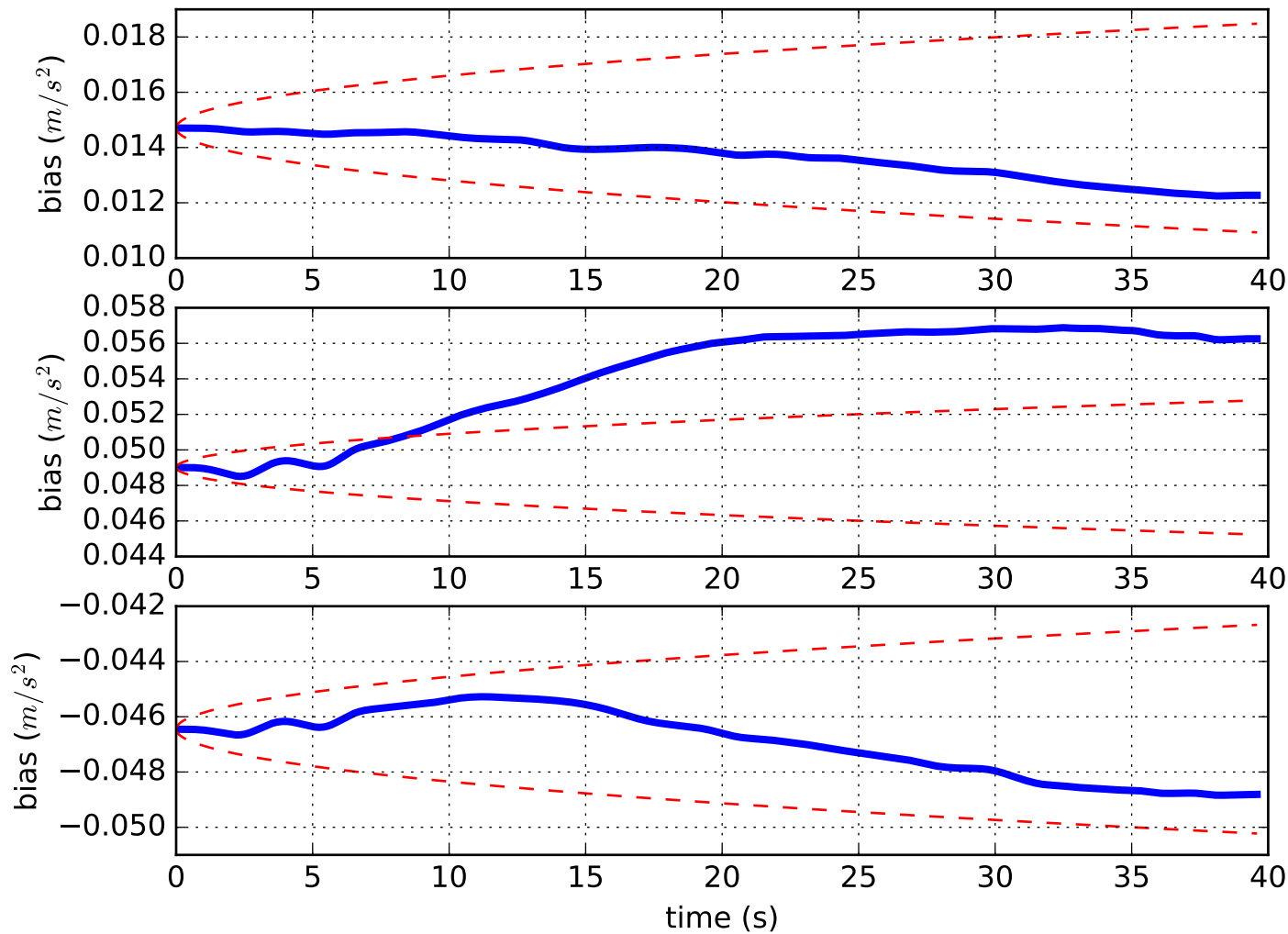
Comparison of predicted and measured specific force (imu0 frame)



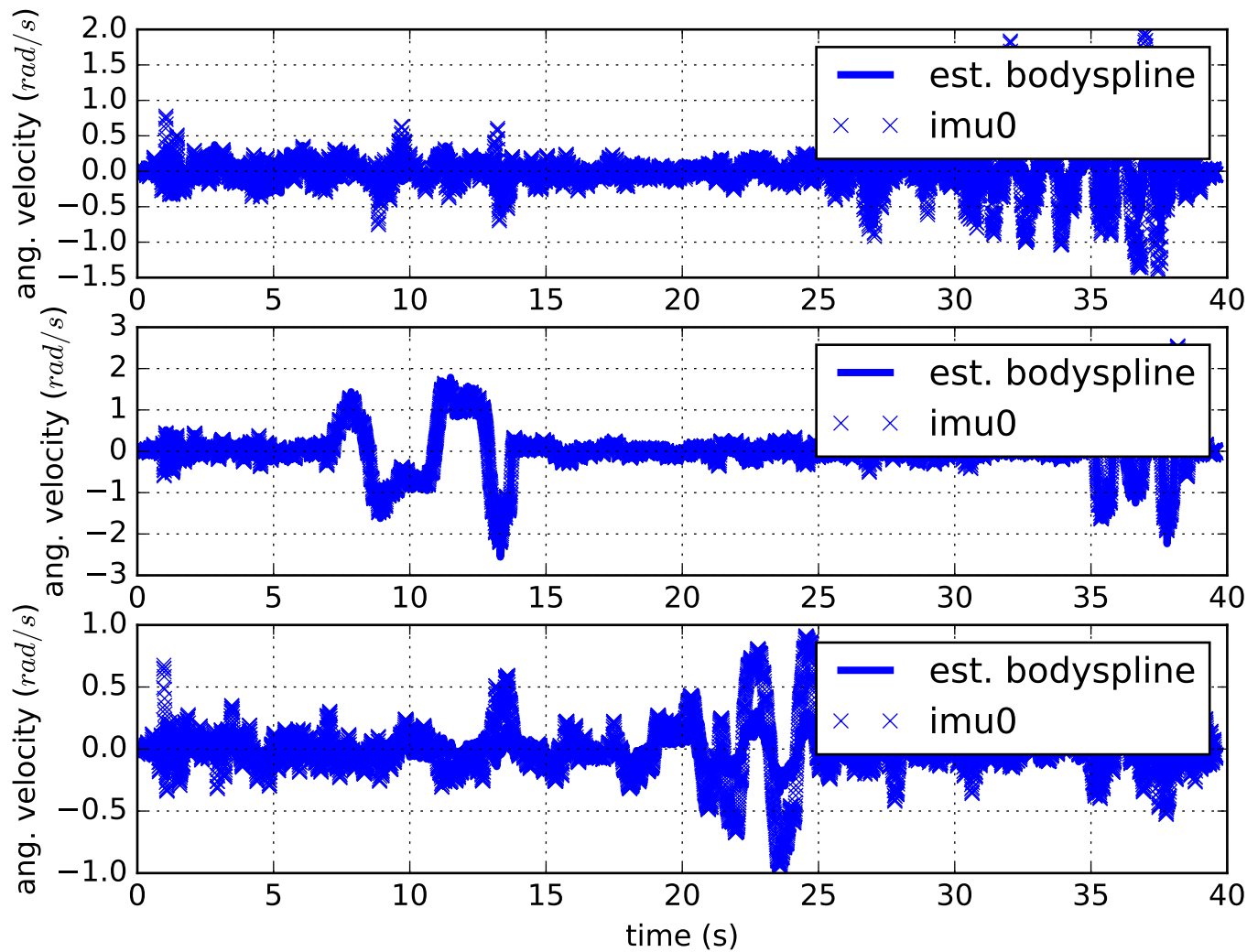
imu0: acceleration error



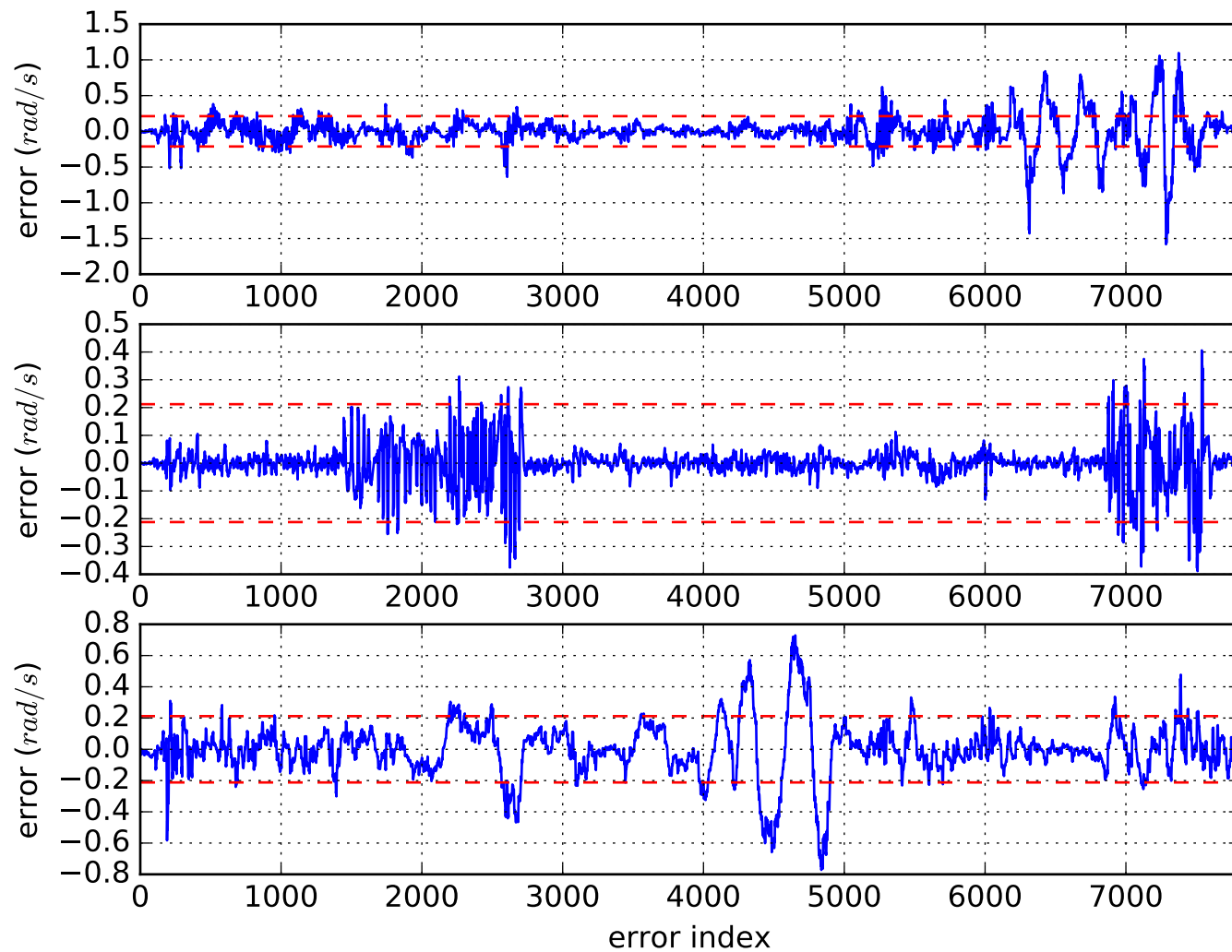
imu0: estimated accelerometer bias (imu frame)



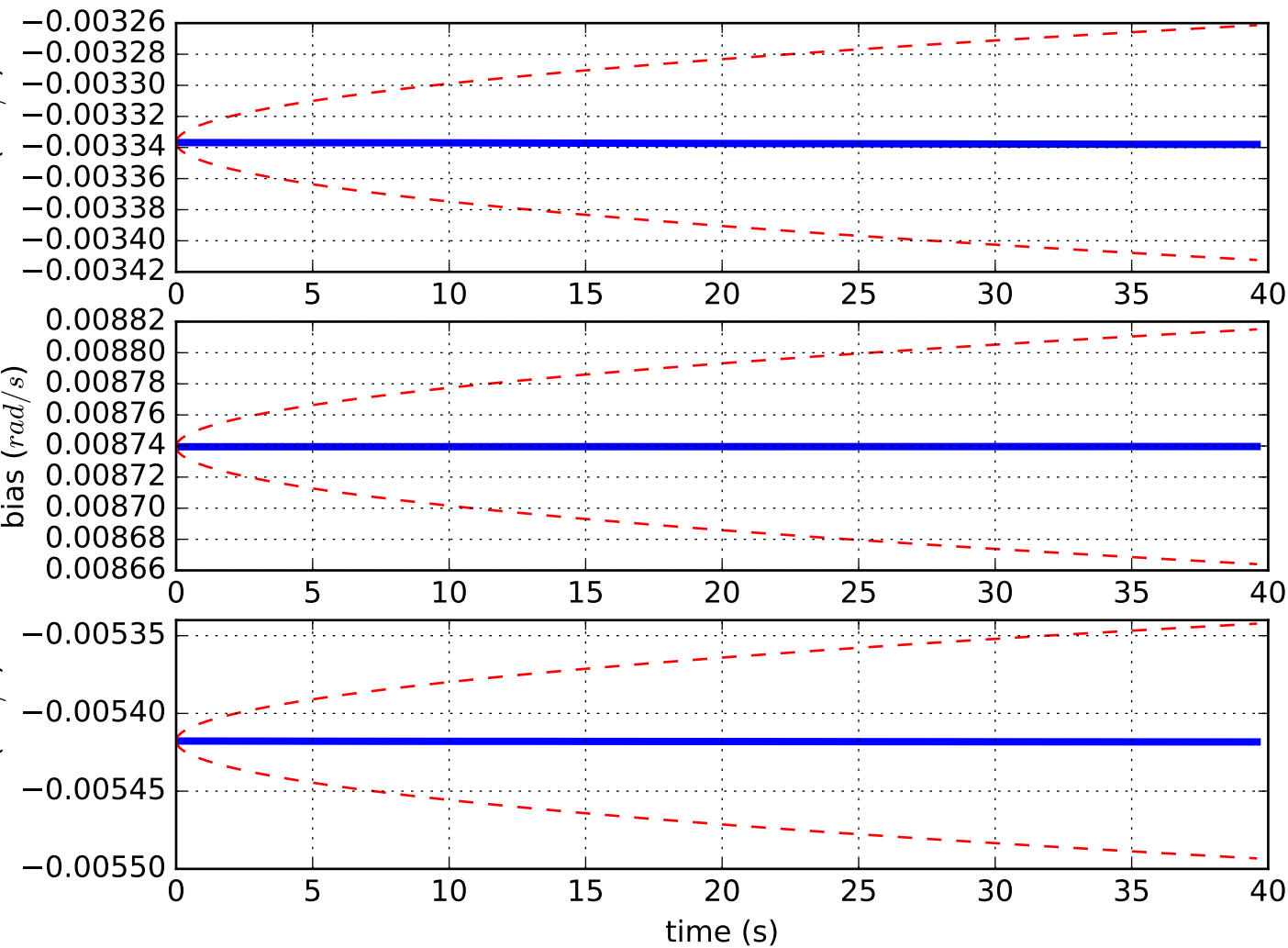
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

