

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.412942415329, median 0.278025778888, std: 0.442910807947

Gyroscope error (imu0): mean 5.49479469511, median 4.74833870881, std: 3.74595176178

Accelerometer error (imu0): mean 1.16751367669, median 0.713931461684, std: 1.52663174933

Residuals

Reprojection error (cam0) [px]: mean 0.412942415329, median 0.278025778888, std: 0.442910807947

Gyroscope error (imu0) [rad/s]: mean 10.6672082099, median 9.21809102408, std: 7.27212745962

Accelerometer error (imu0) [m/s^2]: mean 0.00879344265353, median 0.0053771664454, std: 0.0114982368162

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.9973519 0.06151949 0.03878845 -0.08748063]
[-0.06235994 0.99783608 0.02084208 0.04954371]
[-0.03742232 -0.02320573 0.99903006 -0.00960385]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.9973519 -0.06235994 -0.03742232 0.08997912]
[0.06151949 0.99783608 -0.02320573 -0.0442776]
[0.03878845 0.02084208 0.99903006 0.01195518]
[0. 0. 0. 1.]]

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

0.0578514226635

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

[0.12858151 -9.79022787 -0.55075219]

Calibration configuration

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cam0

Camera model: pinhole
Focal length: [657.6283690104826, 874.8200413515597]
Principal point: [295.29354482420024, 230.72956849302324]
Distortion model: radtan
Distortion coefficients: [0.21423558354382966, -0.30586368141414483, -0.00030595444685297177, -0.009906257253676505]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.03 [m]
 Spacing 0.009 [m]

IMU configuration

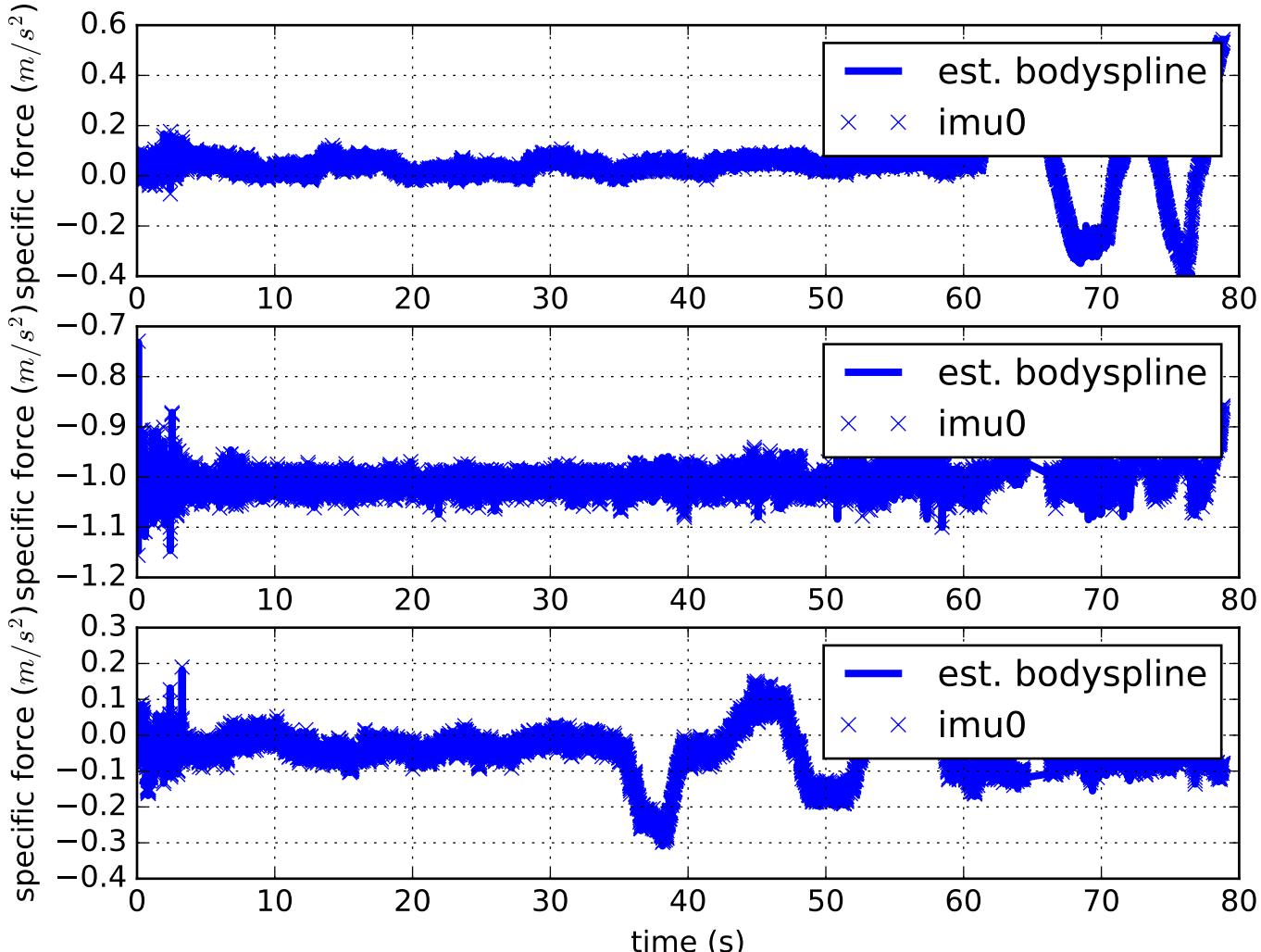
IMU0:

 Model: calibrated
 Update rate: 100.0
 Accelerometer:
 Noise density: 0.000753176843155
 Noise density (discrete): 0.00753176843155
 Random walk: 0.000495131527336
 Gyroscope:
 Noise density: 0.194132971327
 Noise density (discrete): 1.94132971327
 Random walk: 0.0263736983586

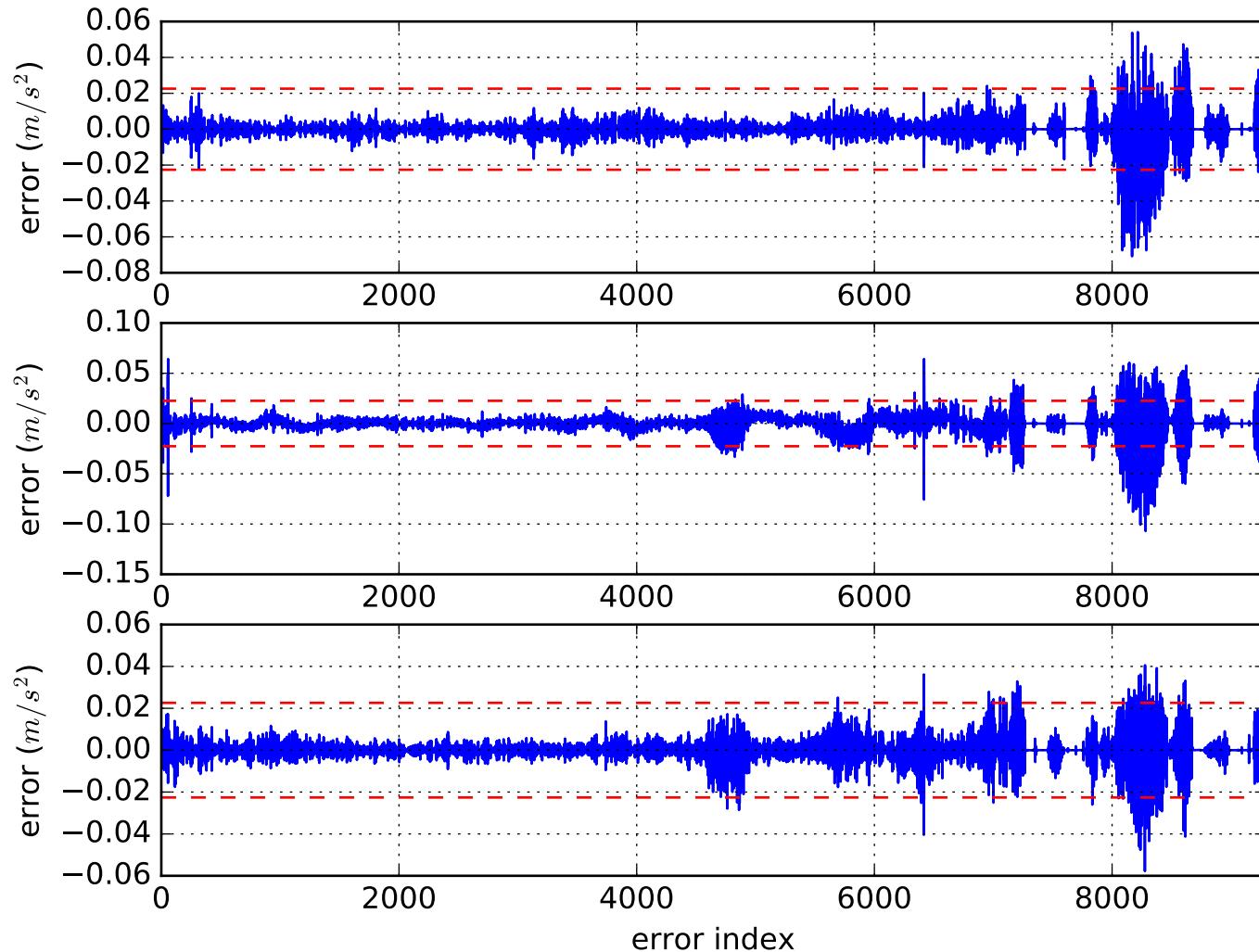
 T_i_b
 [[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

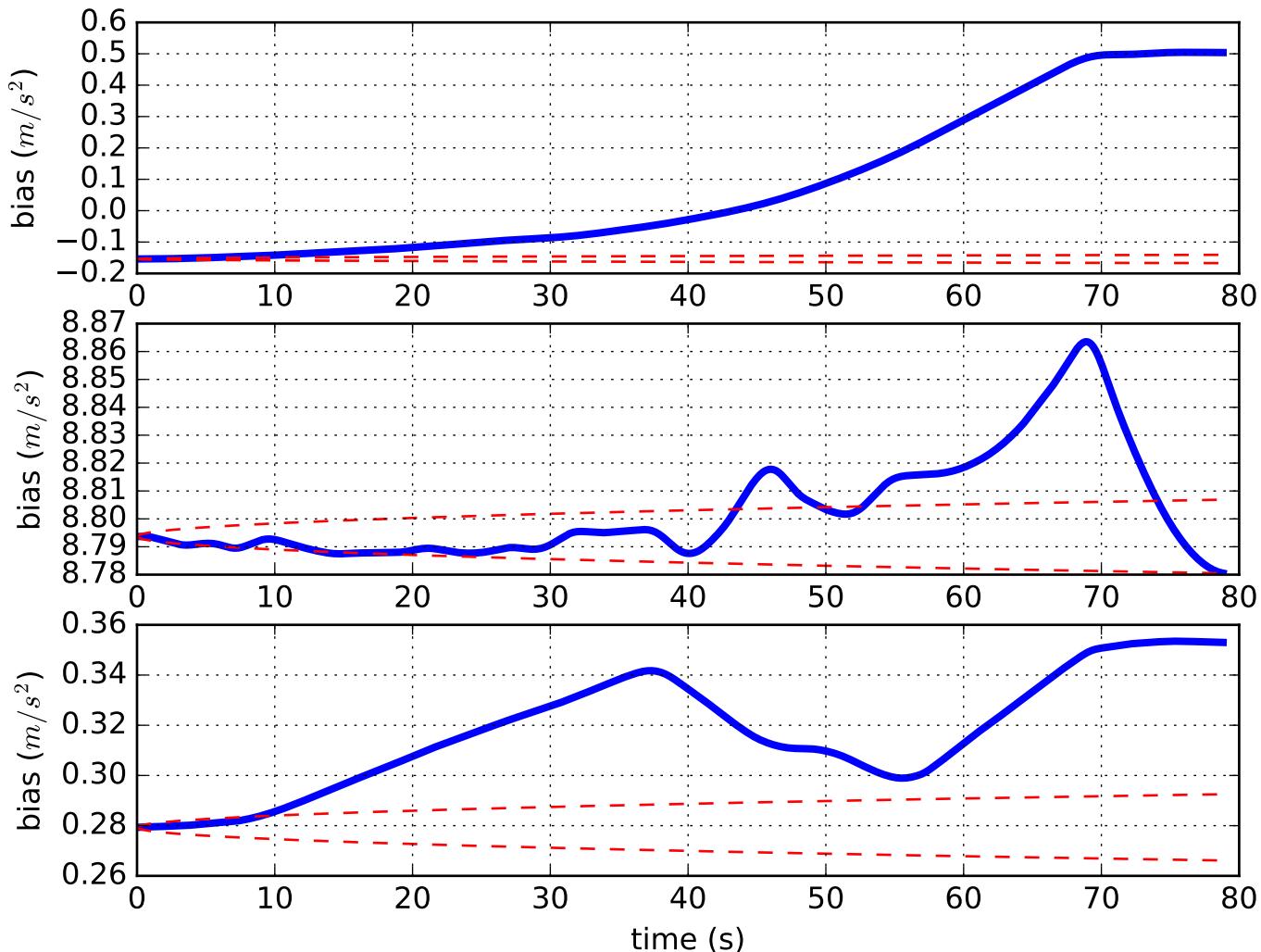
Comparison of predicted and measured specific force (imu0 frame)



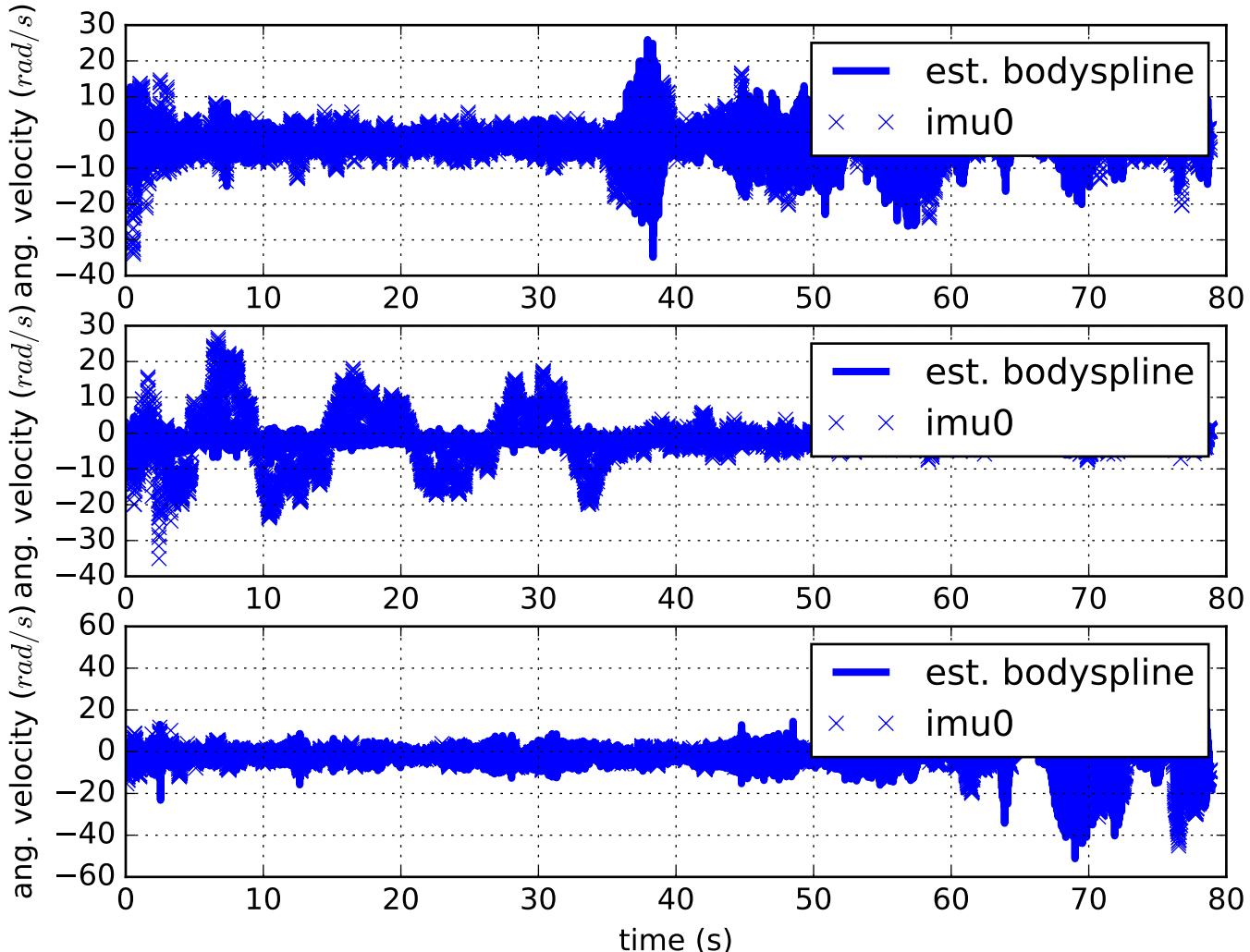
imu0: acceleration error



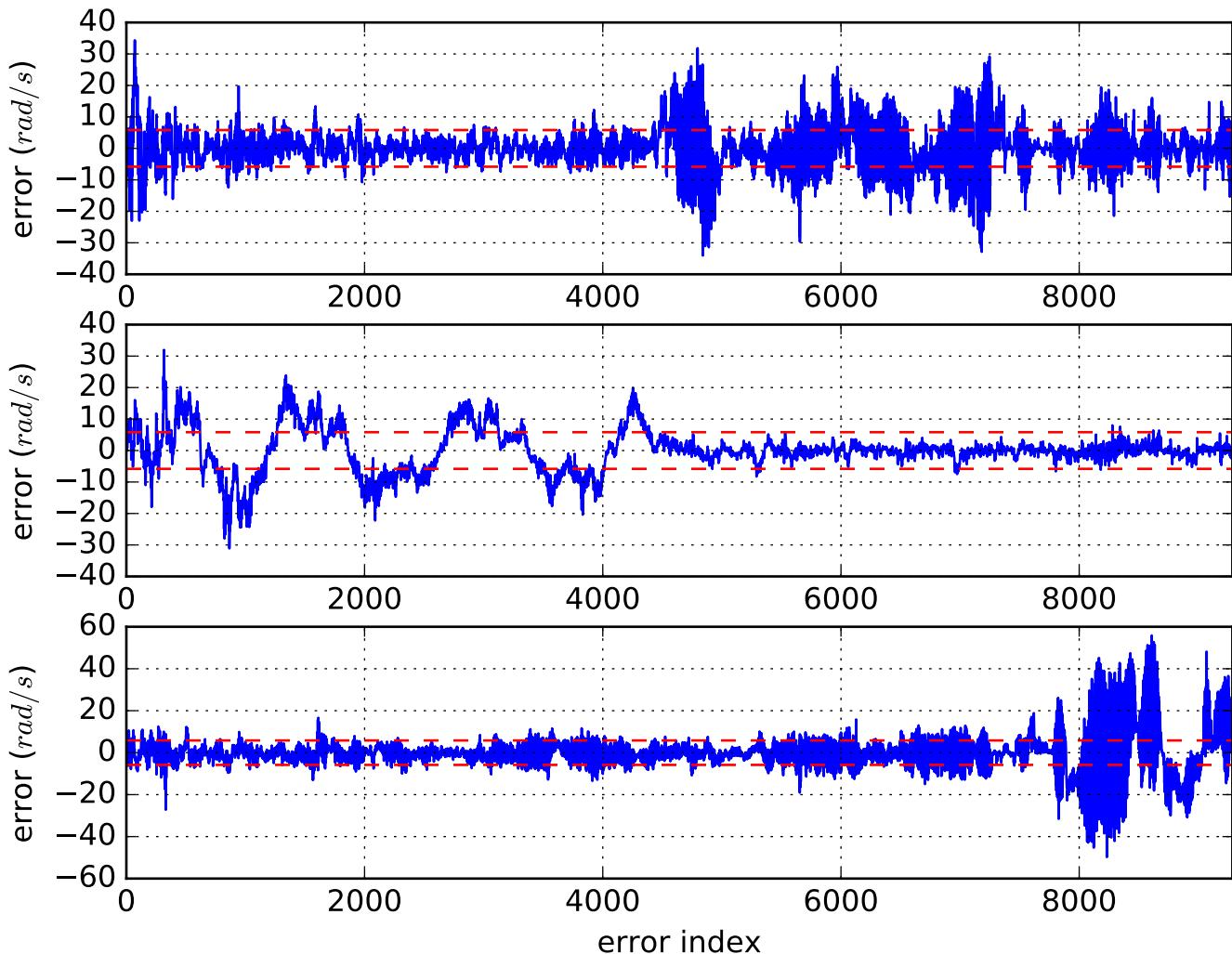
imu0: estimated accelerometer bias (imu frame)



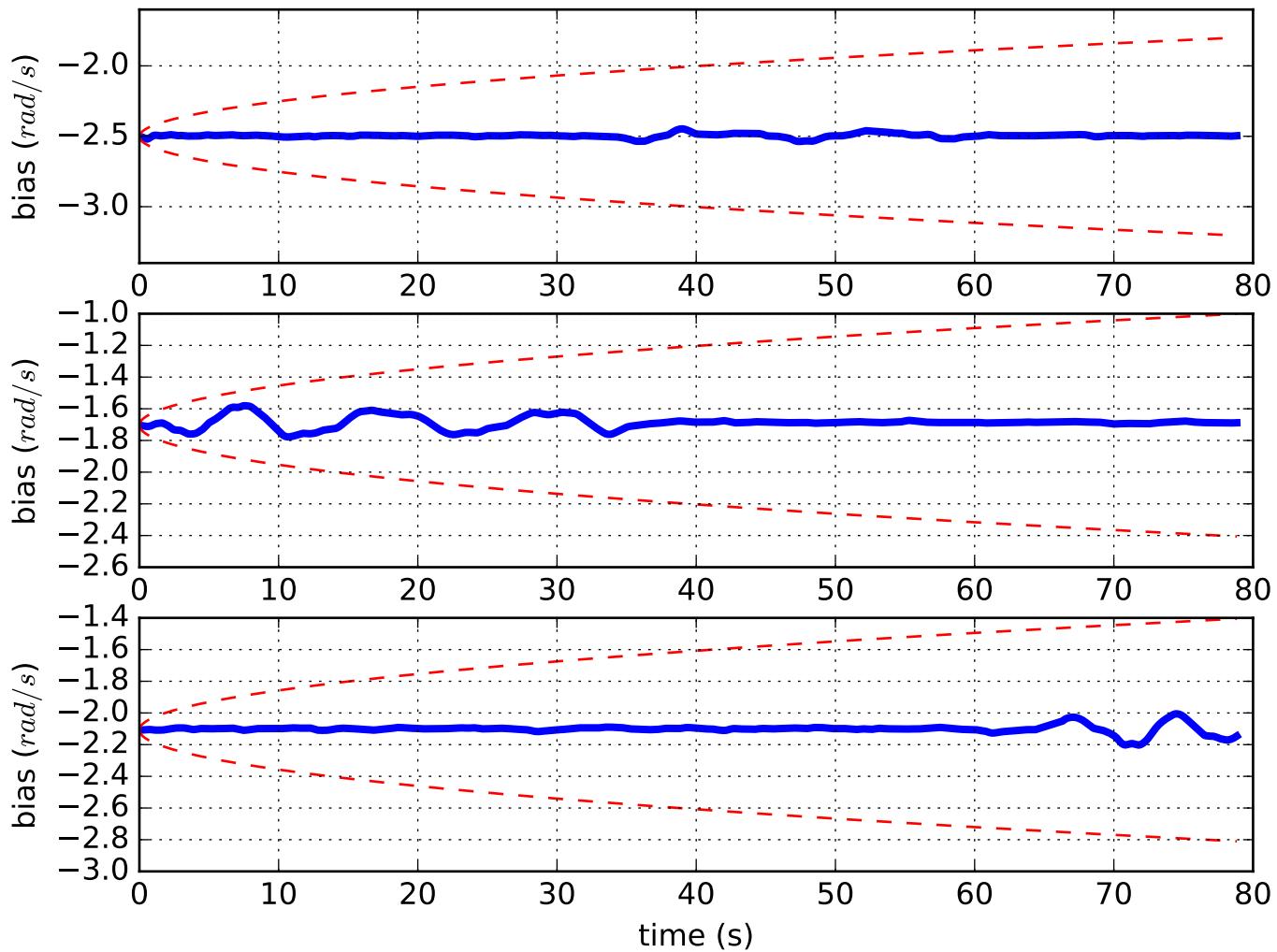
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

