

Calibration results

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Normalized Residuals

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Reprojection error (cam0): mean 0.50087545208, median 0.39738121077, std: 0.481209764301

Gyroscope error (imu0): mean 1.06036341956, median 0.0299197236989, std: 3.2541255109

Accelerometer error (imu0): mean 0.319317072811, median 0.00673083205846, std: 1.62111334617

Residuals

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Reprojection error (cam0) [px]: mean 0.50087545208, median 0.39738121077, std: 0.481209764301

Gyroscope error (imu0) [rad/s]: mean 0.0381475917669, median 0.00107639077734, std: 0.117070288599

Accelerometer error (imu0) [m/s^2]: mean 0.129849306607, median 0.00273707217715, std: 0.659220761607

Transformation (cam0):

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T\_ci: (imu0 to cam0):

[[-0.53513575 -0.72458798 -0.43428331 -0.10689852]  
[ 0.1459217 0.42707236 -0.89236543 -0.03433481]  
[ 0.83206766 -0.540908 -0.12280858 0.35910216]  
[ 0. 0. 0. 1. ]]

T\_ic: (cam0 to imu0):

[[-0.53513575 0.1459217 0.83206766 -0.35099232]  
[-0.72458798 0.42707236 -0.540908 0.1314473]  
[-0.43428331 -0.89236543 -0.12280858 -0.03296261]  
[ 0. 0. 0. 1. ]]

timeshift cam0 to imu0: [s] (t\_imu = t\_cam + shift)

-1.9610495678

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

[ 3.41390383 -9.19188369 -0.15151857]

Calibration configuration

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cam0

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Camera model: pinhole  
Focal length: [530.00468109, 521.86027041]  
Principal point: [428.96714026, 248.36783979]  
Distortion model: equidistant  
Distortion coefficients: [0.31205856, 0.23307093, -0.13151944, 0.12435412]  
Type: aprilgrid  
Tags:  
  Rows: 6  
  Cols: 6  
  Size: 0.072 [m]  
  Spacing 0.0216 [m]

## IMU configuration

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### IMU0:

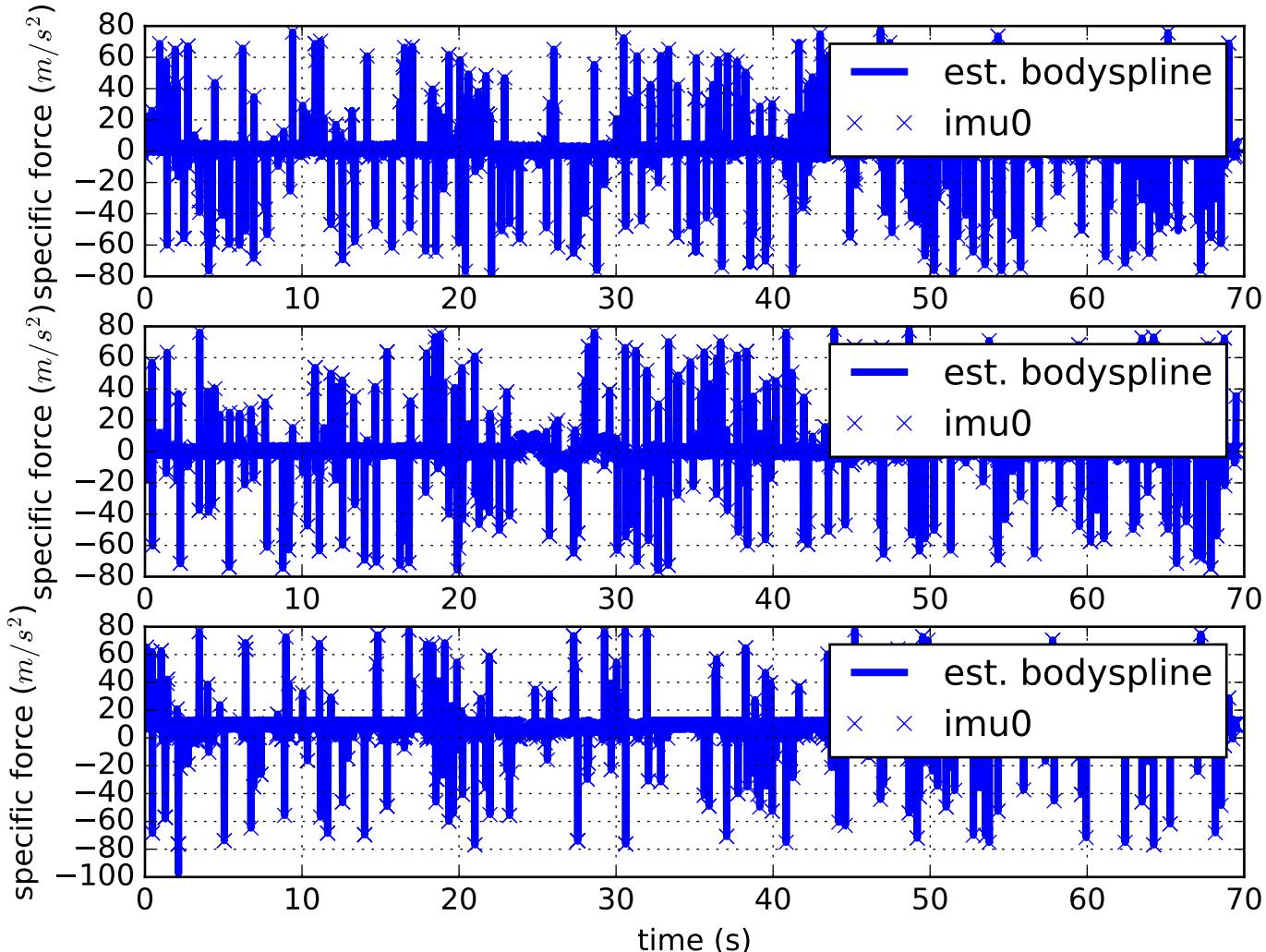
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  Model: calibrated  
  Update rate: 100.0  
  Accelerometer:  
    Noise density: 0.0406646927658  
    Noise density (discrete): 0.406646927658  
    Random walk: 0.00311311645065  
  Gyroscope:  
    Noise density: 0.00359759598107  
    Noise density (discrete): 0.0359759598107  
    Random walk: 0.000114424620336

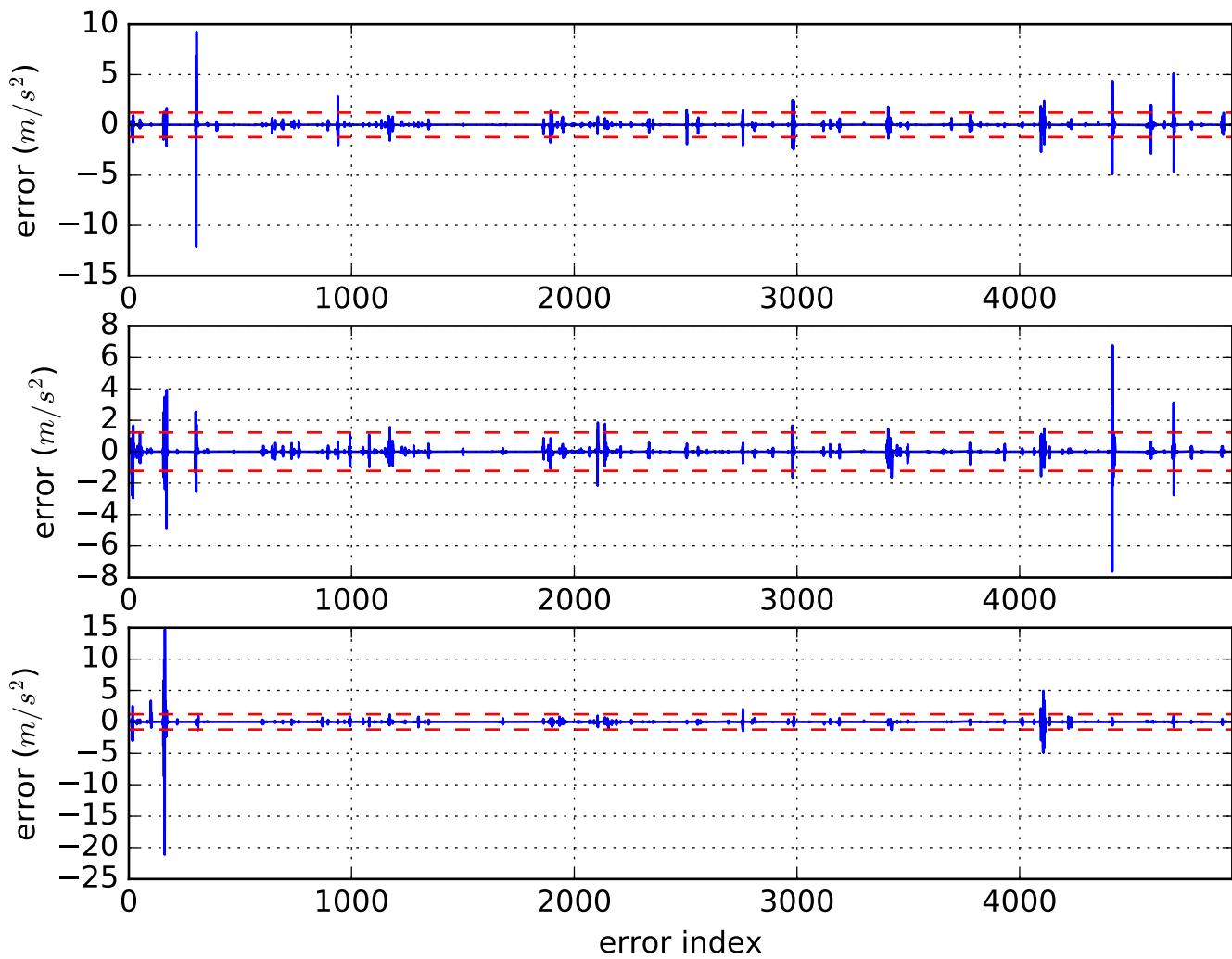
  T\_i\_b  
  [[ 1. 0. 0. 0.]  
   [ 0. 1. 0. 0.]  
   [ 0. 0. 1. 0.]  
   [ 0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

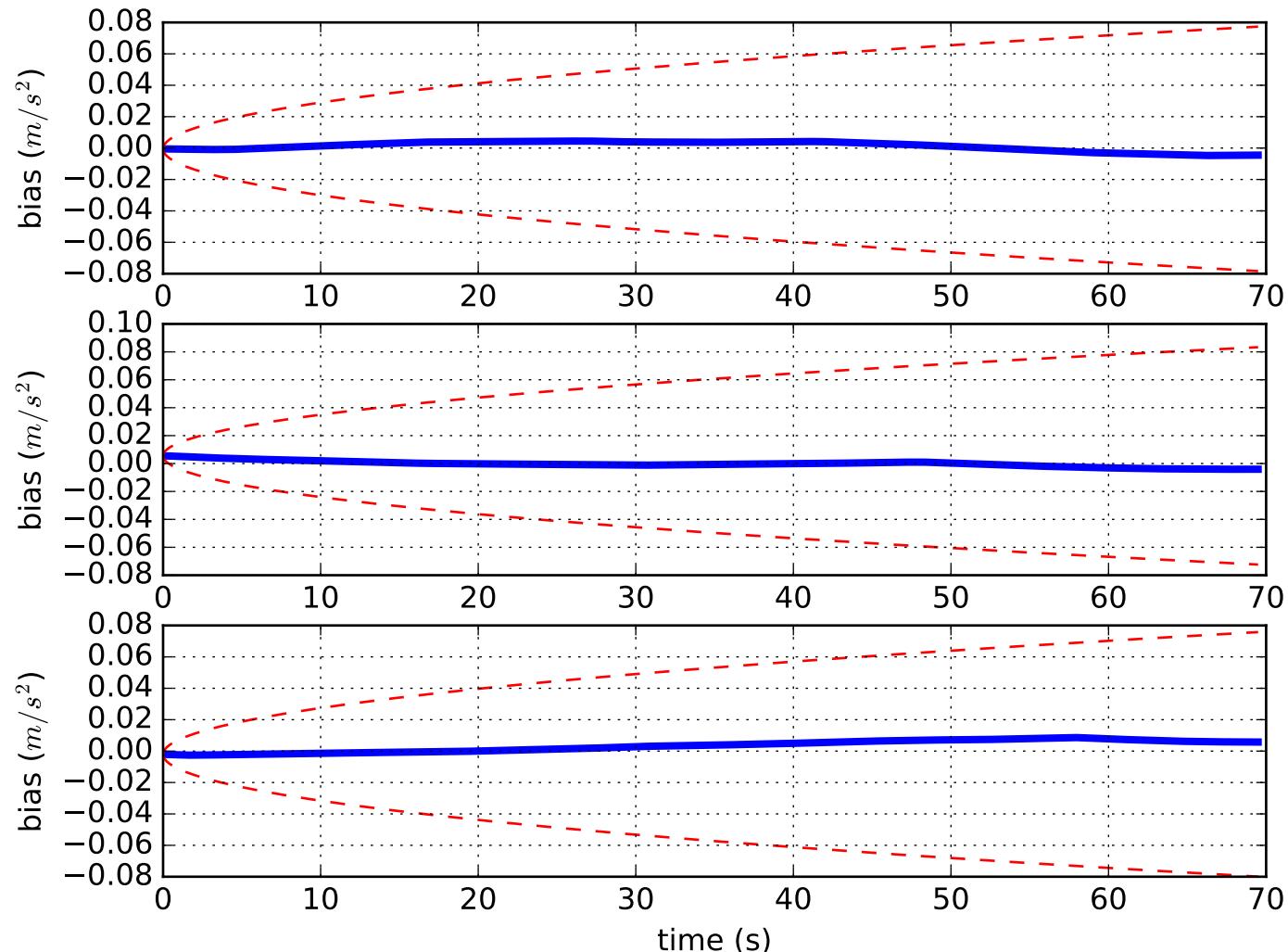
Comparison of predicted and measured specific force (imu0 frame)



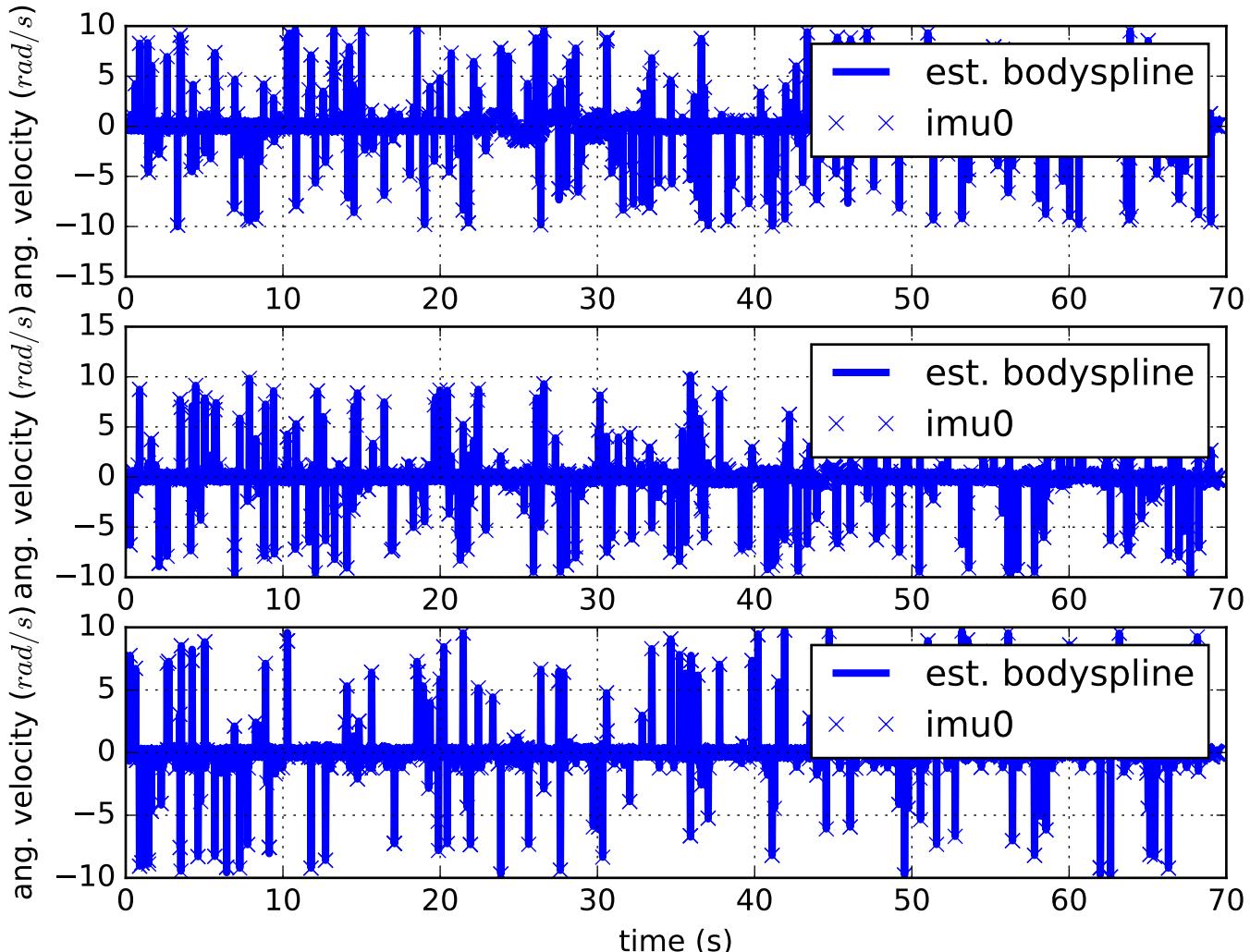
imu0: acceleration error



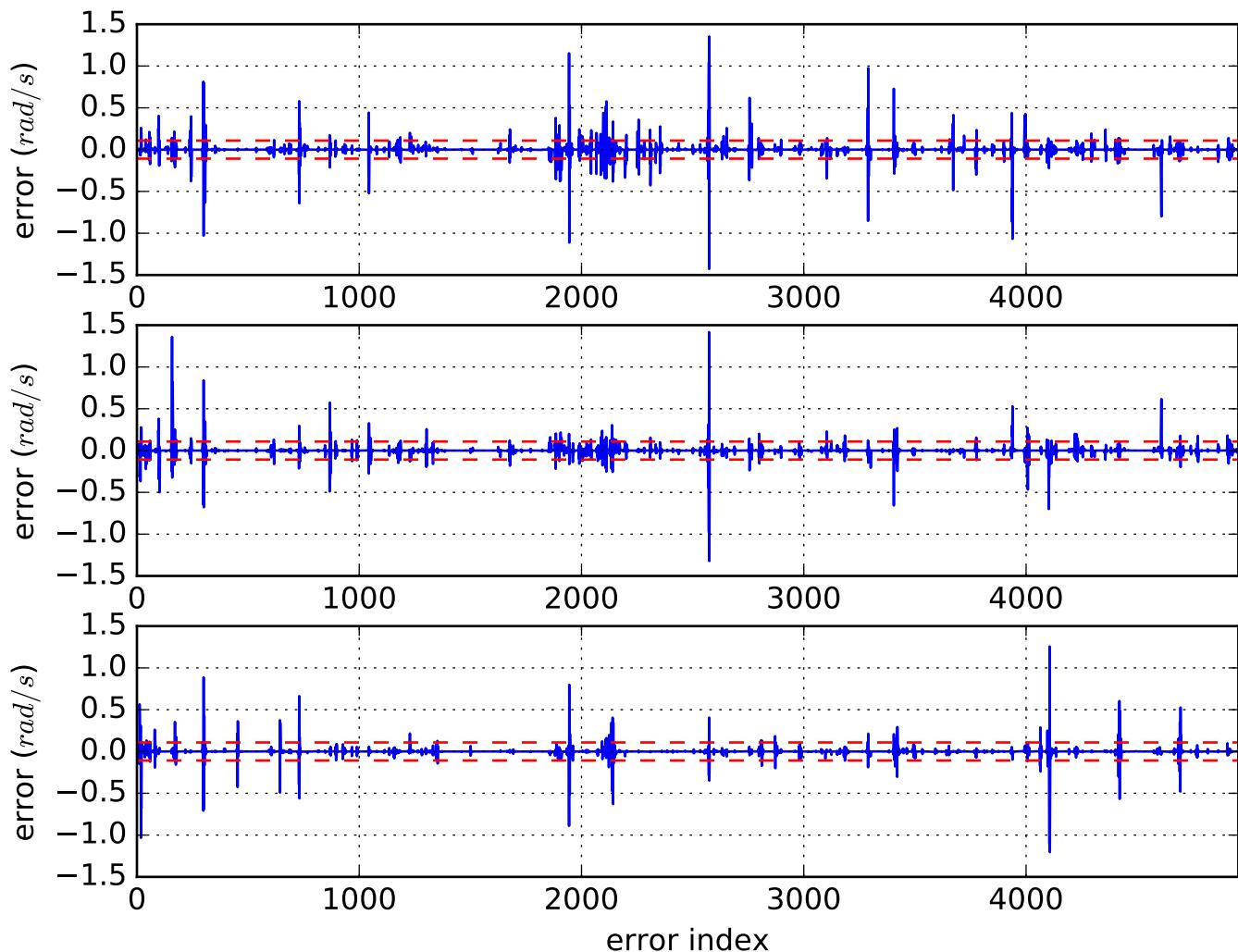
# imu0: estimated accelerometer bias (imu frame)



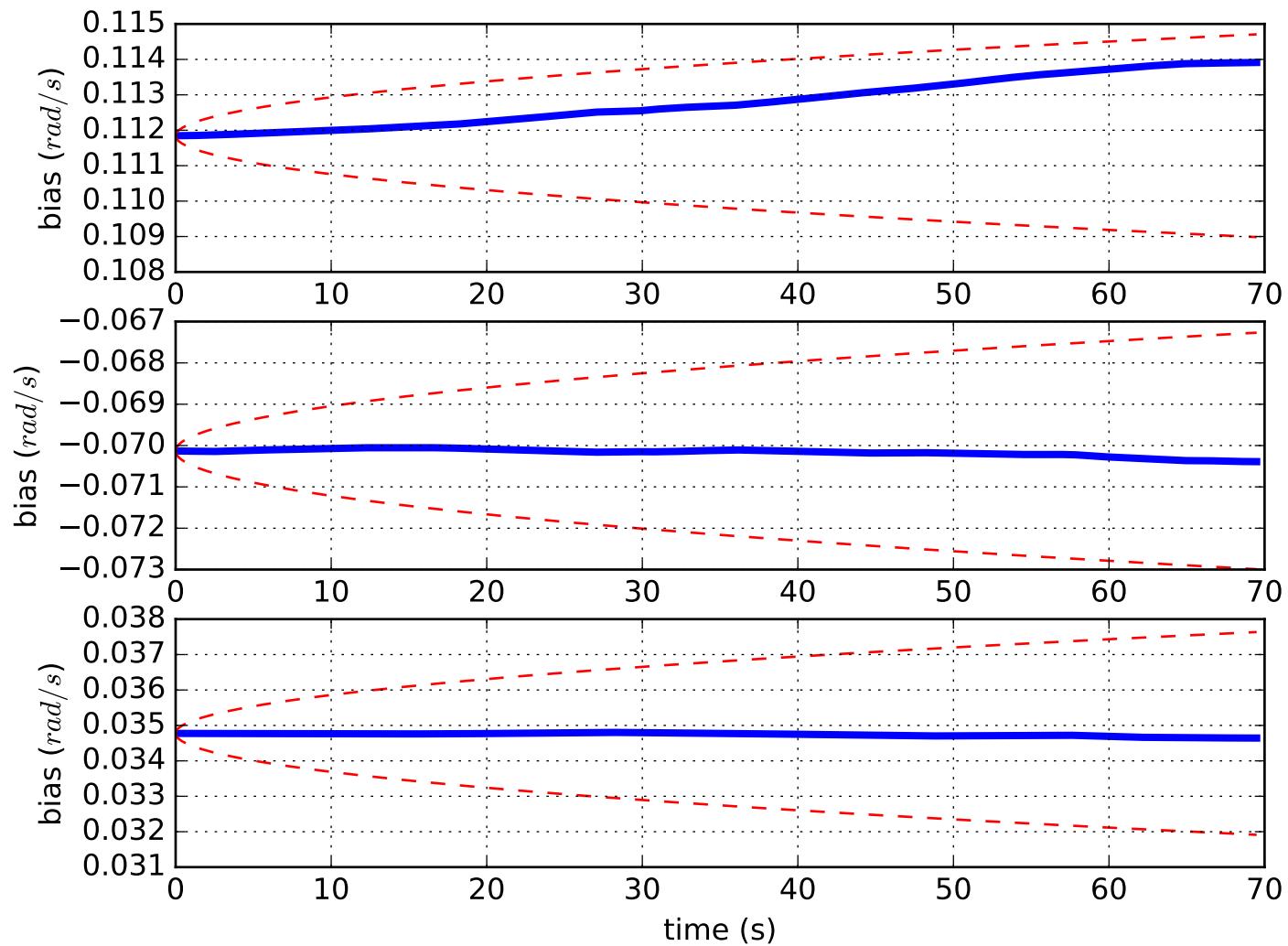
Comparison of predicted and measured angular velocities (body frame)



# imu0: angular velocities error



# imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

