Calibration results
===================
Normalized Residuals

Reprojection error (cam0):   mean 0.134938178336, median 0.115027115016, std: 0.0952465729065
Gyroscope error (imu0):   mean 0.346992845303, median 0.244047651329, std: 0.399689846606
Accelerometer error (imu0):   mean 0.148707013765, median 0.0802850523506, std: 0.208799108315

Residuals

Reprojection error (cam0) [px]:   mean 0.134938178336, median 0.115027115016, std: 0.0952465729065
Gyroscope error (imu0) [rad/s]:   mean 0.0981443975747, median 0.0690270996751, std: 0.113049360363
Accelerometer error (imu0) [m/s^2]: mean 0.420606951374, median 0.22708041978, std: 0.590573061581

Transformation (cam0):

T_ci: (imu0 to cam0):
[[-0.99989788 -0.01427173 -0.00073409 -0.00123079]
 [-0.00064373 -0.00633502 0.99997973 0.00624036]
 [-0.01427609 0.99987809 0.00632518 -0.05218335]
 [0.   0.   0.   1.   ]]

T_ic: (cam0 to imu0):
[[-0.99989788 -0.00064373 -0.01427609 -0.00197163]
 [-0.01427173 -0.00633502 0.99987809 0.05219896]
 [-0.00073409 0.99997973 0.00632518 -0.00591107]
 [0.   0.   0.   1.   ]]

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)
0.0464305525559

Gravity vector in target coords: [m/s^2]
[0.1330764 -9.80528334 0.08445177]

Calibration configuration
==========================

cam0

  Camera model: pinhole
  Focal length: [442.99584899845615, 441.96294832741086]
  Principal point: [377.83478055031213, 195.82882684251308]
  Distortion model: radtan
  Distortion coefficients: [0.03452724578861431, -0.031123349655095868, -7.591550595724006e-05, 0.0019221583490141813]
  Type: aprilgrid
  Tags:
    Rows: 6
    Cols: 6
    Size: 0.055 [m]
    Spacing 0.0165 [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.]]
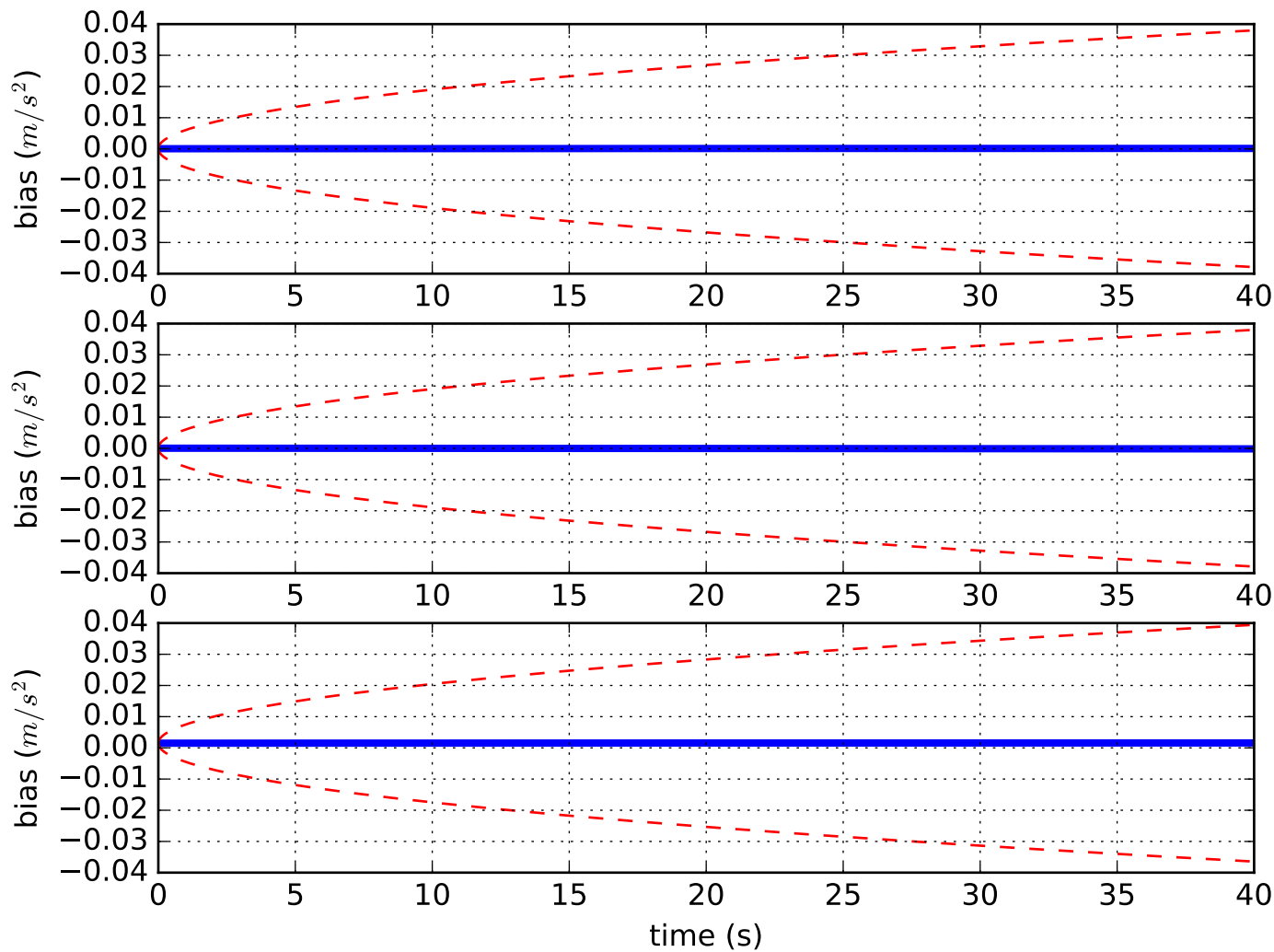 time offset with respect to IMU0: 0.0 [s]

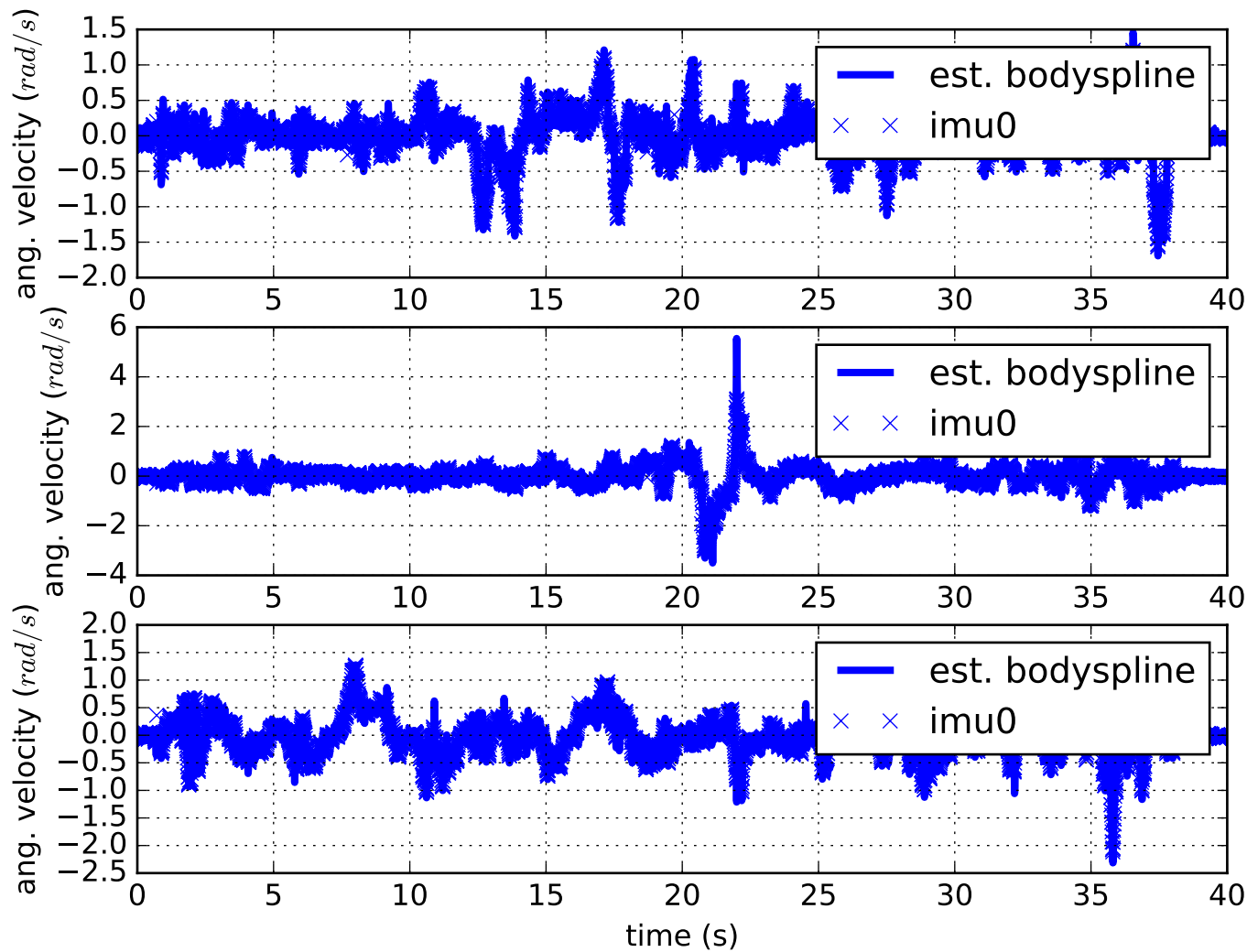Comparison of predicted and measured specific force (imu0 frame)
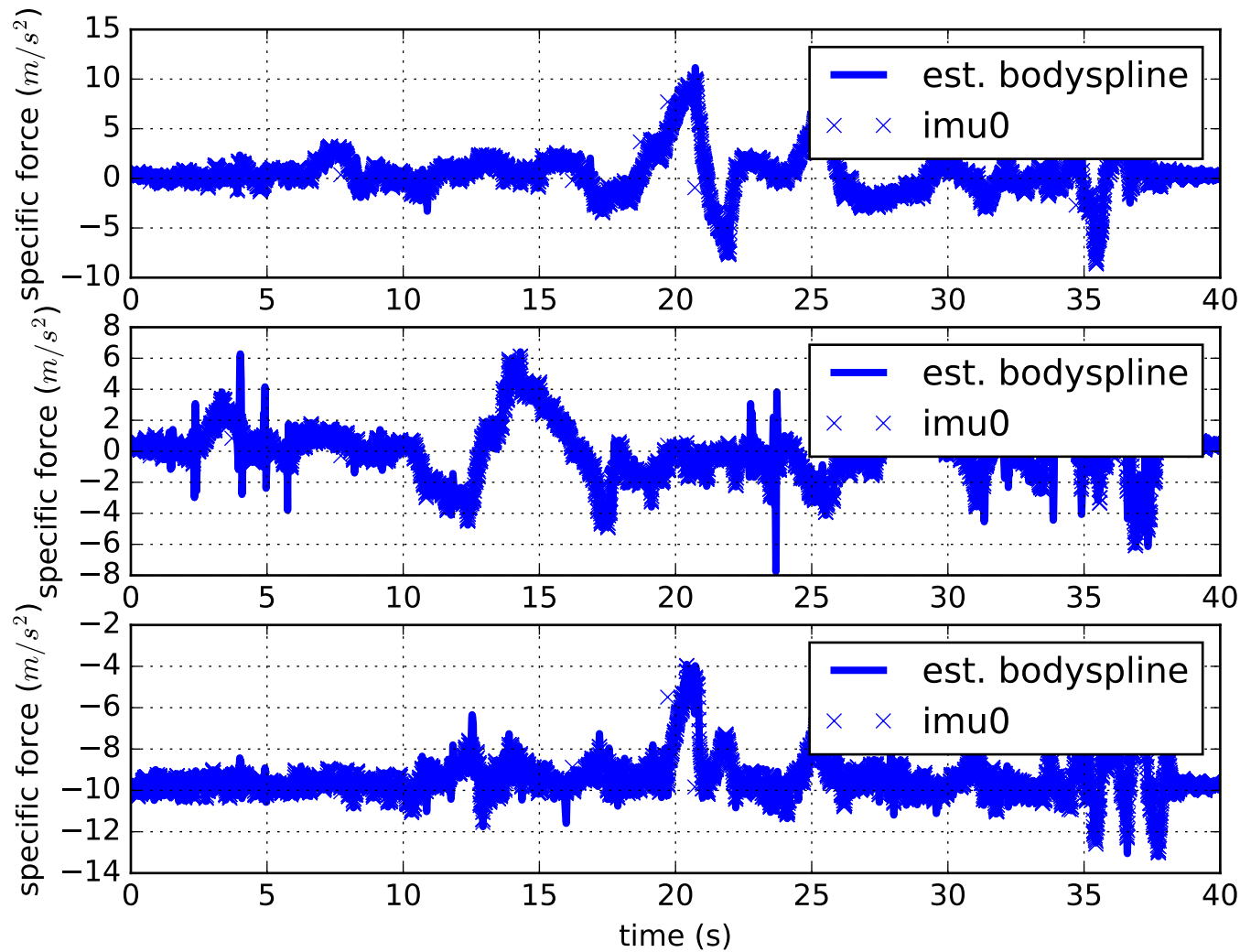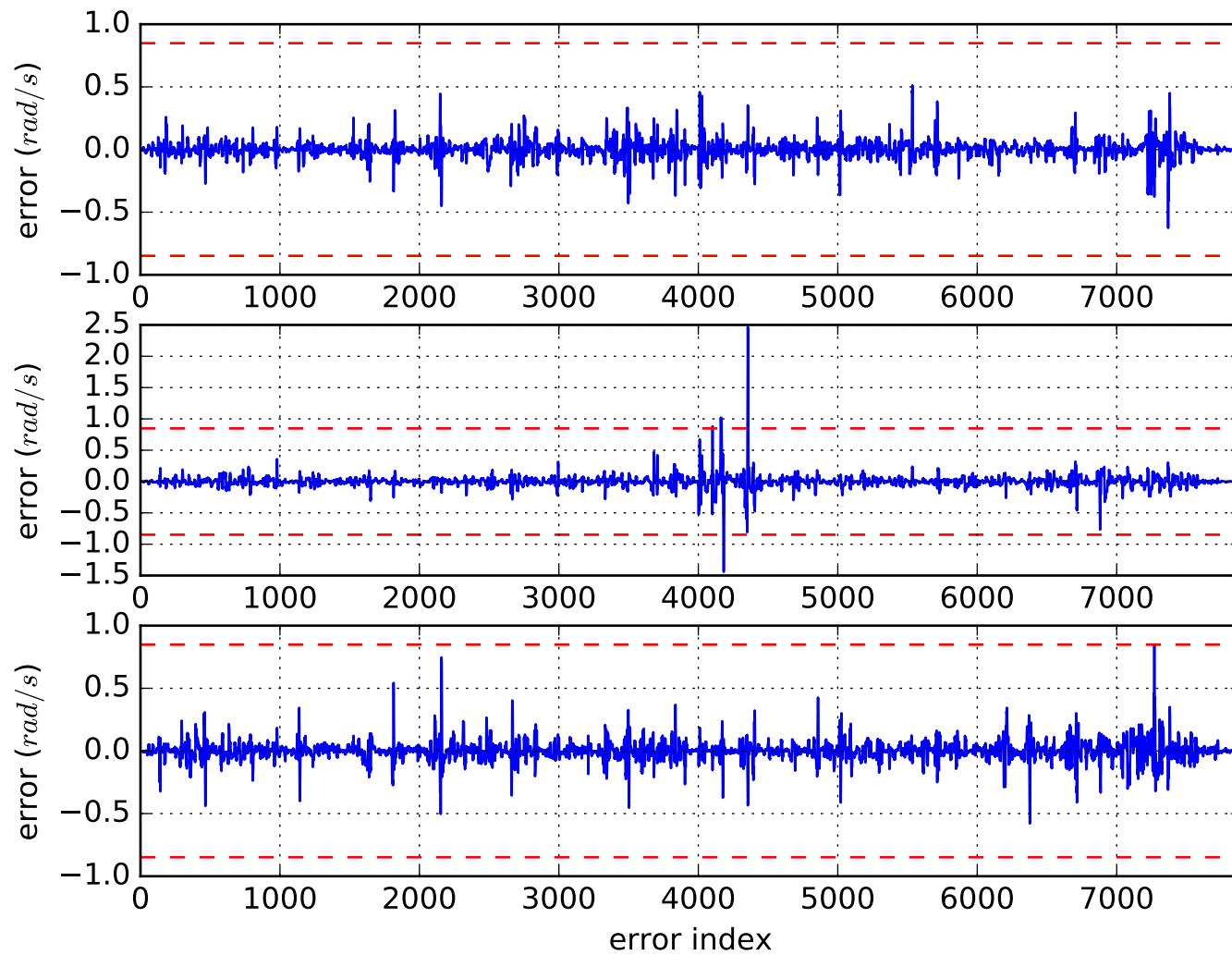
imu0: acceleration error
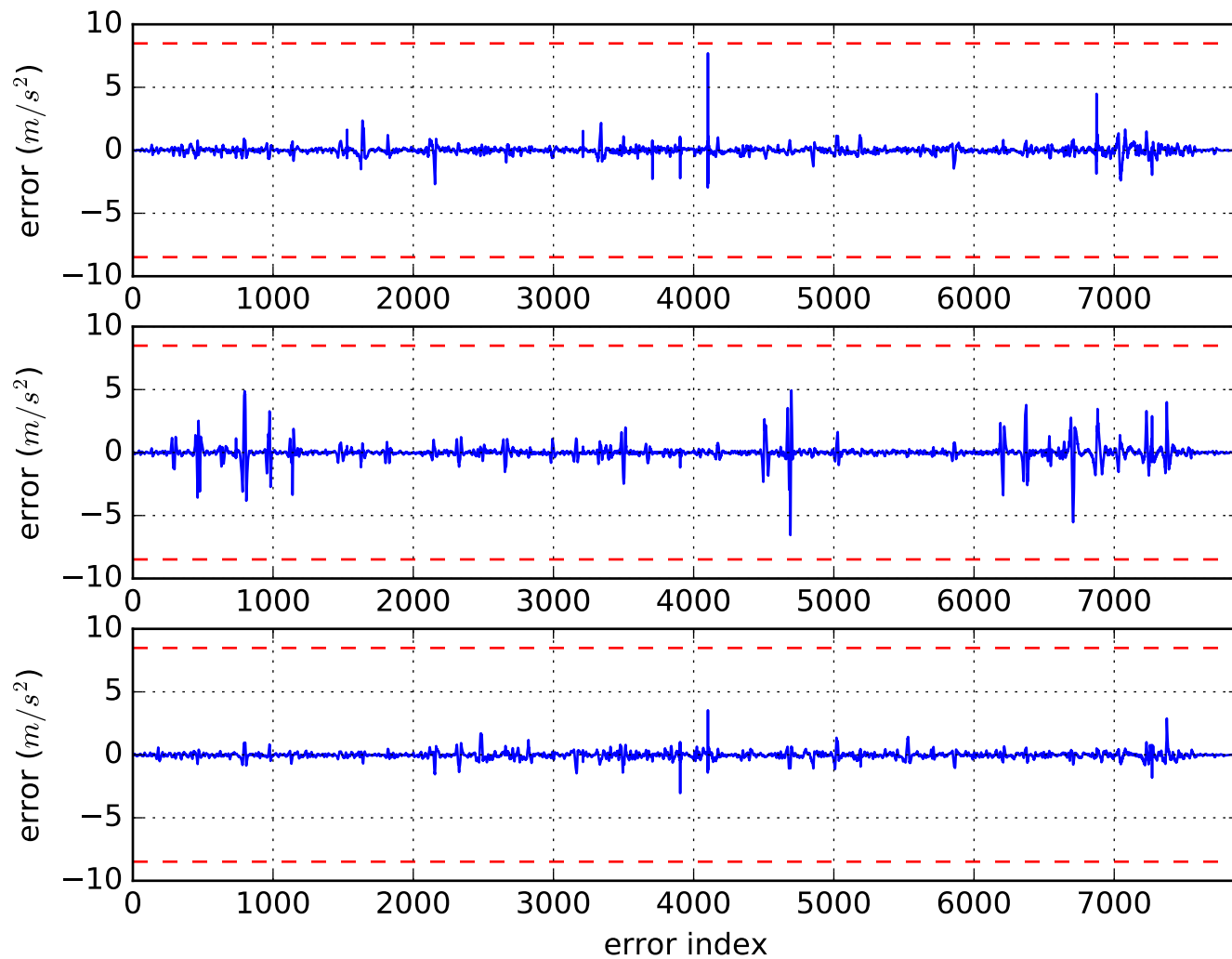
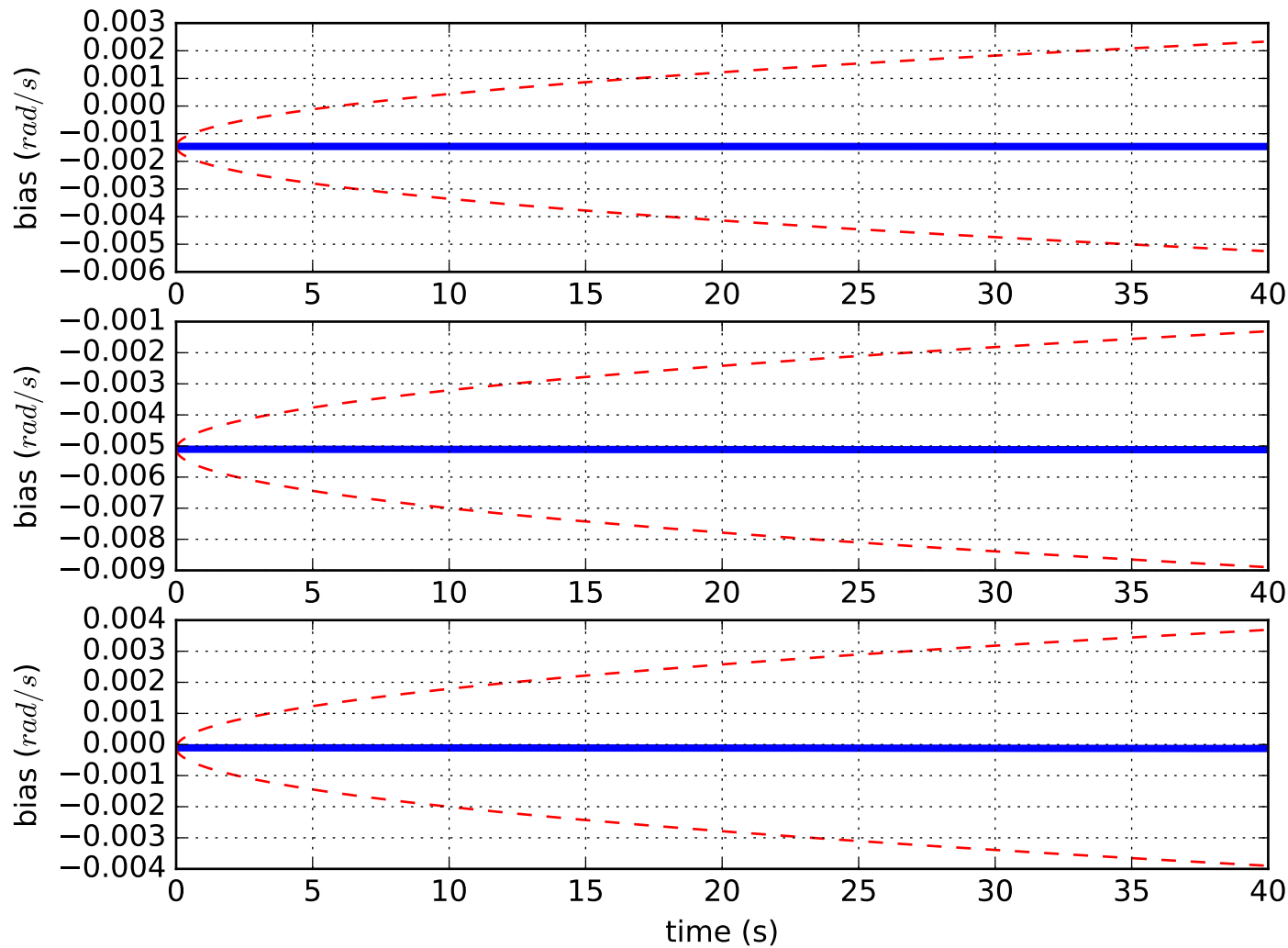imu0: estimated accelerometer bias (imu frame)

Comparison of predicted and measured angular velocities (body frame)

imu0: angular velocities error

imu0: estimated gyro bias (imu frame)

cam0: reprojection errors