

Calibration results

=====

Normalized Residuals

Reprojection error (cam0): mean 0.432187986872, median 0.316331897284, std: 0.386870279972
Gyroscope error (imu0): mean 0.382834958949, median 0.220443879977, std: 0.393569731689
Accelerometer error (imu0): mean 0.592664032169, median 0.509977199422, std: 0.355457074141

Residuals

Reprojection error (cam0) [px]: mean 0.432187986872, median 0.316331897284, std: 0.386870279972
Gyroscope error (imu0) [rad/s]: mean 0.000247202788948, median 0.000142344215603, std: 0.00025413
Accelerometer error (imu0) [m/s²]: mean 0.00473299520641, median 0.00407266091619, std: 0.0028386

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[[ -0.00875895 -0.99994589 -0.0056128  0.00909933]
 [ -0.99995811  0.00874386  0.00270718  0.03454966]
 [ -0.00265796  0.00563628 -0.99998058 -0.00380393]
 [  0.          0.          0.          1.          ]]
```

T_ic: (cam0 to imu0):

```
[[ -0.00875895 -0.99995811 -0.00265796  0.03461781]
 [ -0.99994589  0.00874386  0.00563628  0.00881818]
 [ -0.0056128  0.00270718 -0.99998058 -0.00384632]
 [  0.          0.          0.          1.          ]]
```

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)
0.00723869863597

Gravity vector in target coords: [m/s²]
[0.03942161 -9.80606046 -0.08970587]

Calibration configuration

Camera model: pinhole
Focal length: [512.1268330516533, 511.53701227774224]
Principal point: [316.509524920082, 241.36710135094637]
Distortion model: radtan
Distortion coefficients: [0.05896353430176743, -0.07305775642387477, -0.0019191716545278968, -0.0019191716545278968, -0.0019191716545278968, -0.0019191716545278968]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.088 [m]
 Spacing 0.0264 [m]

IMU configuration

=====

IMU0:

Model: scale-misalignment
Update rate: 100.0
Accelerometer:
 Noise density: 0.000798596666832
 Noise density (discrete): 0.007985966666832
 Random walk: 2.68326860511e-05
Gyroscope:
 Noise density: 6.45716341128e-05
 Noise density (discrete): 0.000645716341128
 Random walk: 7.54635405717e-08

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]

Gyroscope:

[-0.00184153 0.00096261 0.99359493]]

A [(rad/s)/(m/s²):

[[-0.00001089 -0.00033408 0.00021442]

[0.0008248 -0.00003136 0.0000041]

[-0.00002123 0.0000609 0.00003403]]

C_gyro_i:

[[0.99994701 -0.00766774 -0.00686829]

[0.00771612 0.99994542 0.00704411]

[0.00681391 -0.00709673 0.9999516]]

Accelerometer:

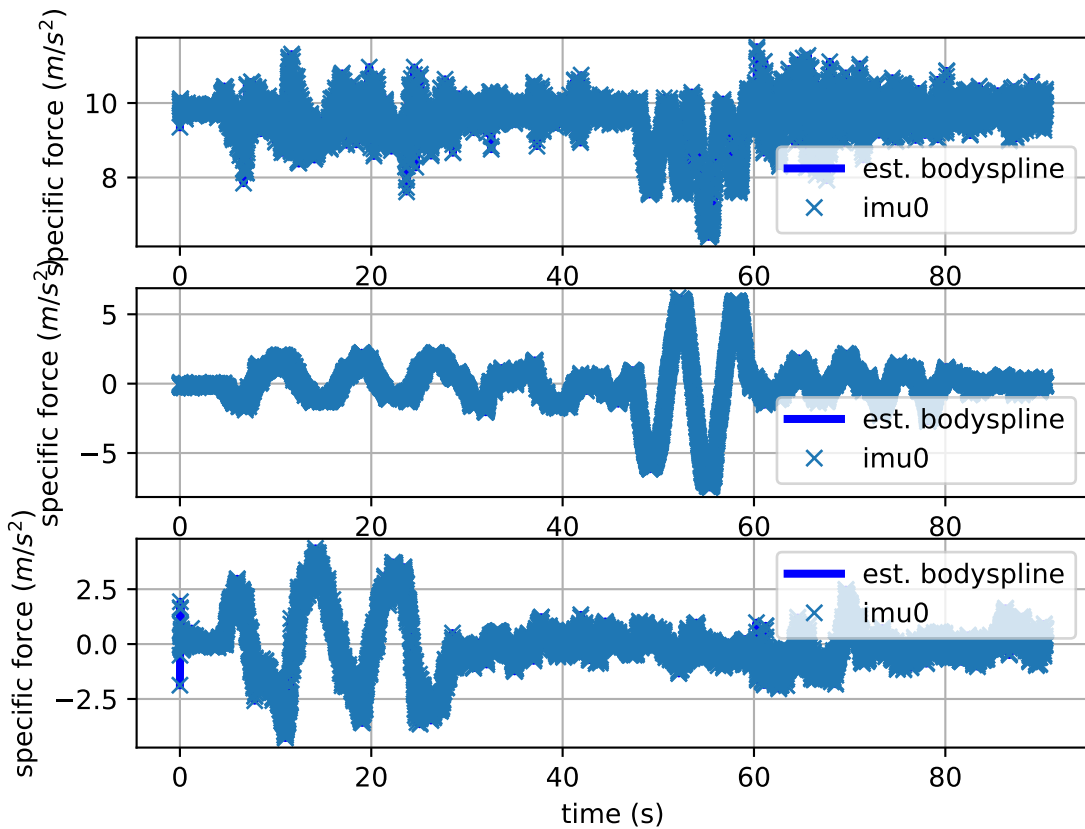
M:

[[1.00085384 0. 0.]

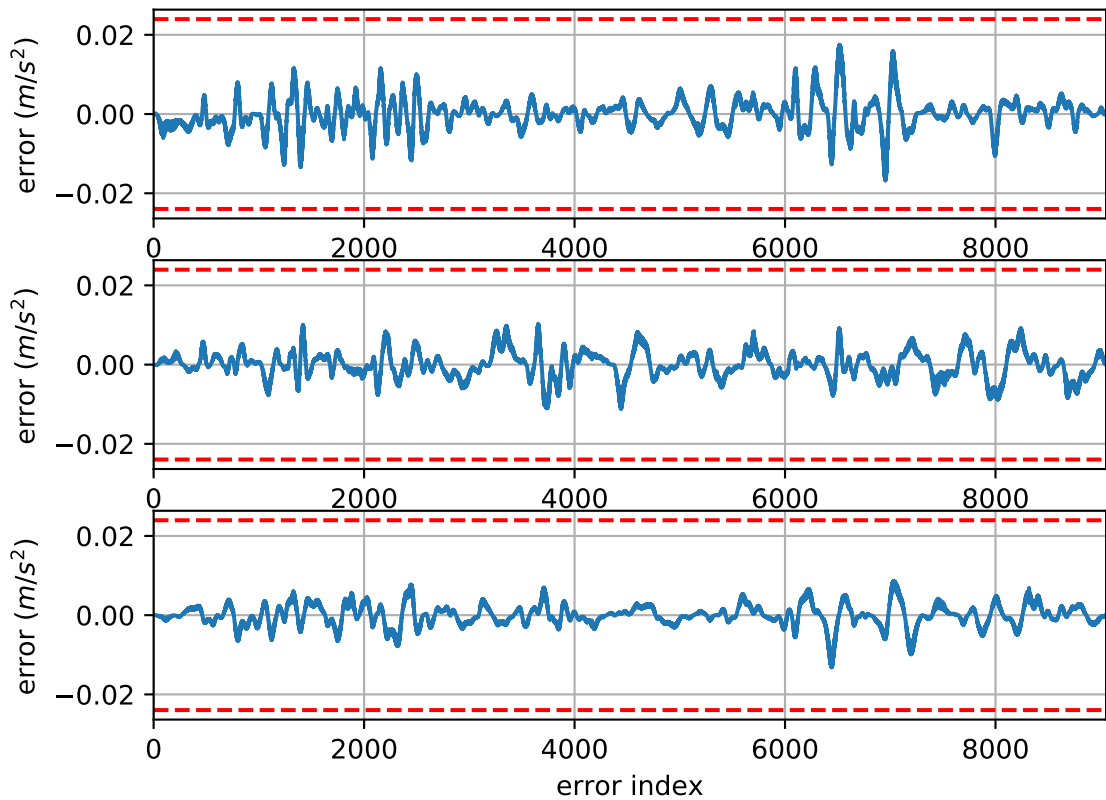
[-0.00033127 1.00147496 0.]

[0.00280947 -0.00217288 0.9967952]]

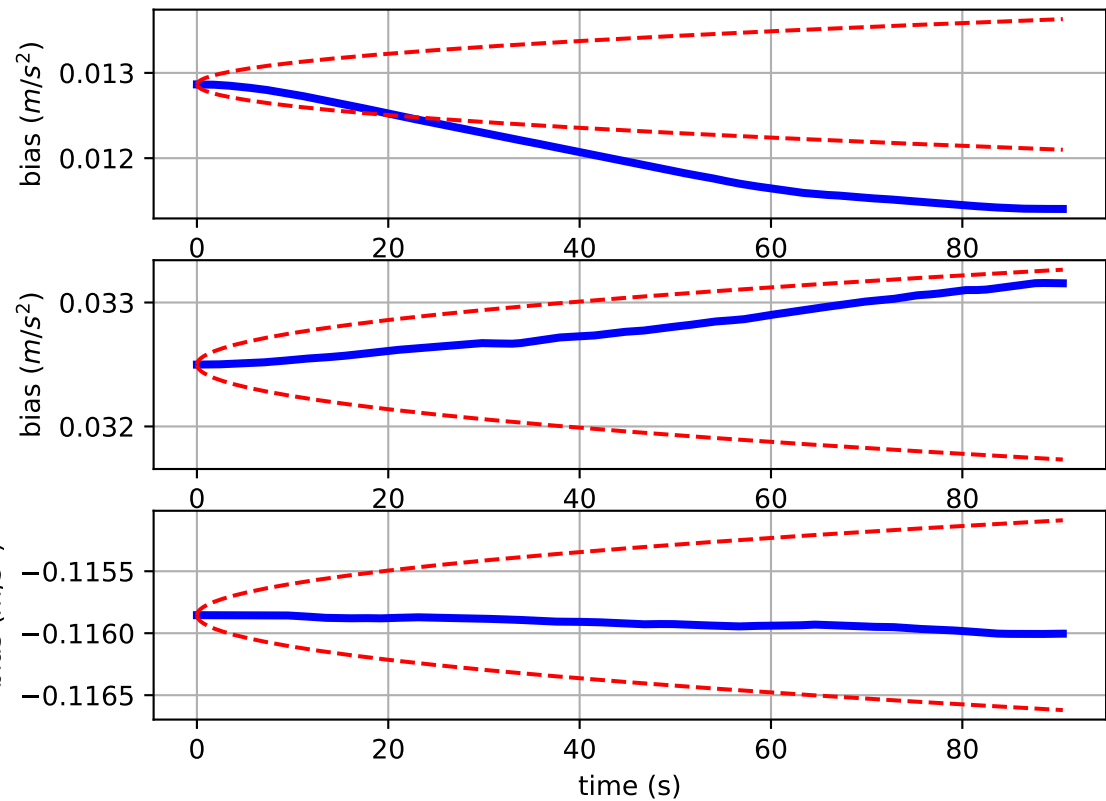
Comparison of predicted and measured specific force (imu0 frame)



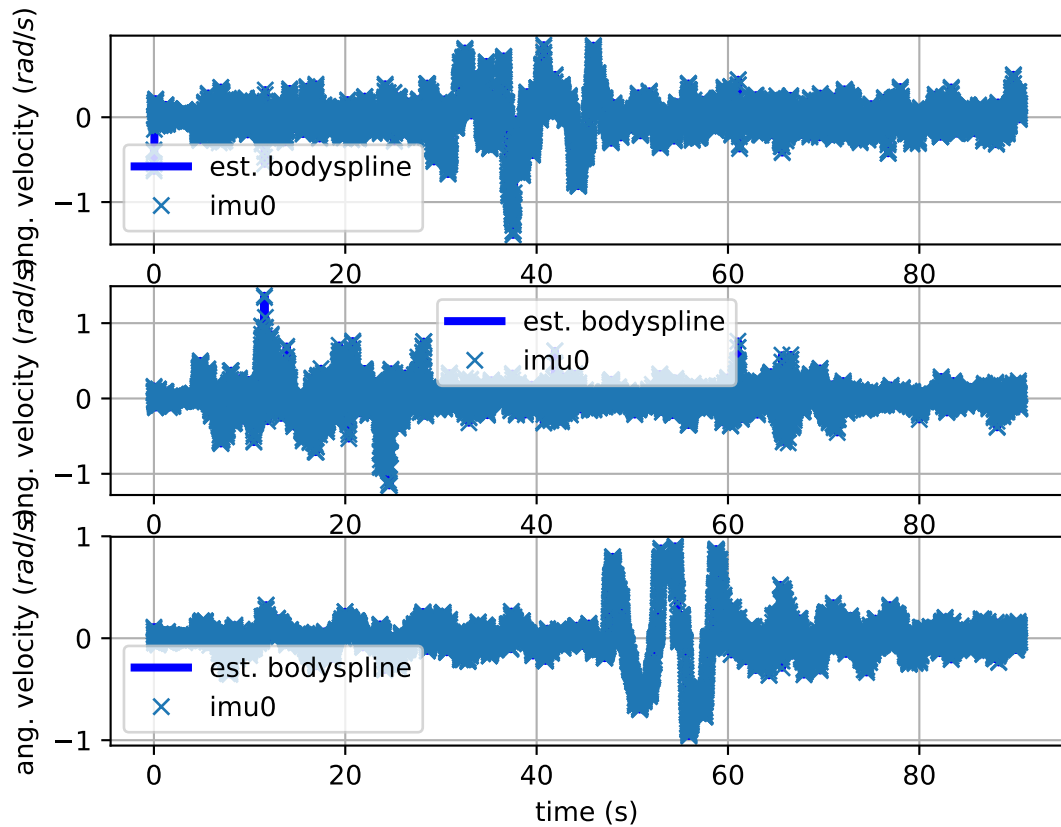
imu0: acceleration error



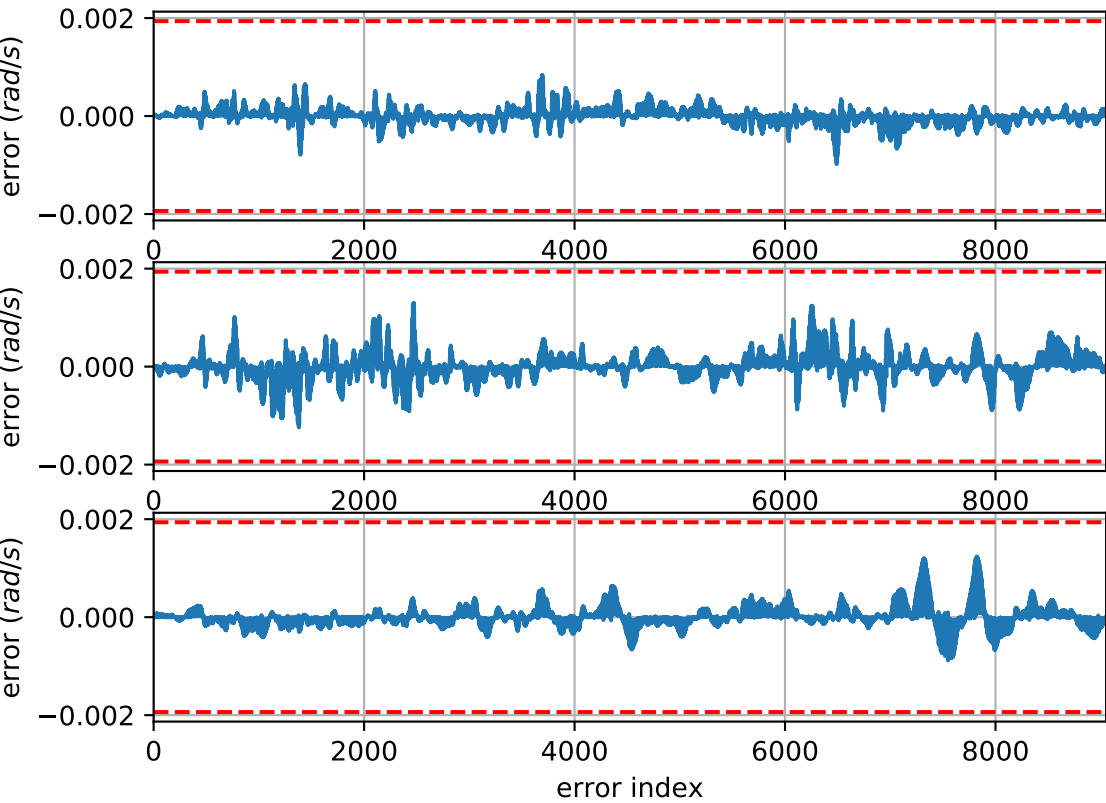
imu0: estimated accelerometer bias (imu frame)



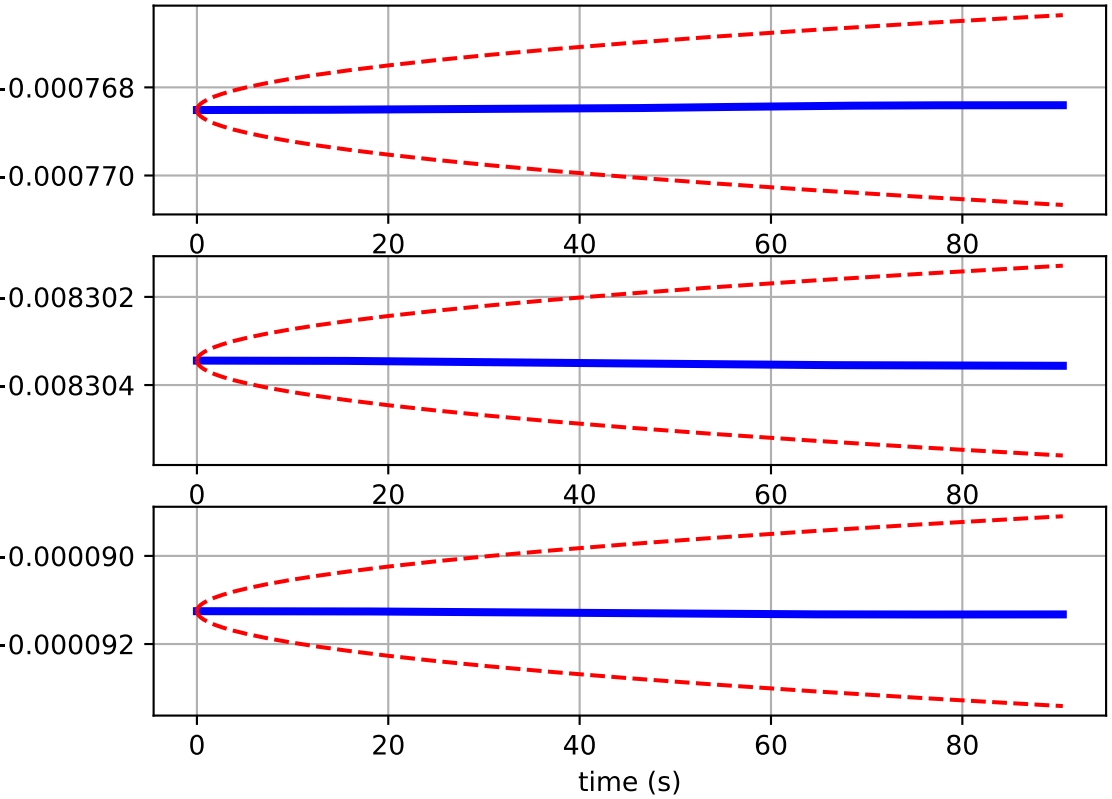
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

