

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.5686066443323815, median 0.4274727193828581, std: 0.4716811042874359
Gyroscope error (imu0): mean 0.43663995847526876, median 0.37020401514590373, std: 0.27679097607454883
Accelerometer error (imu0): mean 0.3581570903194531, median 0.32875927772115854, std: 0.19565074149104225

Residuals

Reprojection error (cam0) [px]: mean 0.5686066443323815, median 0.4274727193828581, std: 0.4716811042874359
Gyroscope error (imu0) [rad/s]: mean 0.010462778828554778, median 0.00887083890681966, std: 0.0066324730666440625
Accelerometer error (imu0) [m/s^2]: mean 0.06105415561520175, median 0.0560427830258111, std: 0.033352099232683834

Transformation (cam0):

T_ci: (imu0 to cam0):

```
[ [ 0.99999434 -0.00124937 0.00312248 0.02167631]
  [ 0.00122351 0.99996506 0.00826965 -0.00340487]
  [-0.0031327 -0.00826579 0.99996093 -0.01291196]
  [ 0.         0.         0.         1.         ] ]
```

T_ic: (cam0 to imu0):

```
[ [ 0.99999434 0.00122351 -0.0031327 -0.02171247]
  [-0.00124937 0.99996506 -0.00826579 0.00332511]
  [ 0.00312248 0.00826965 0.99996093 0.01287193]
  [ 0.         0.         0.         1.         ] ]
```

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

0.008725053880659276

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

[0.06254045 -0.09350939 -9.80590473]

Calibration configuration

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cam0

Camera model: pinhole

Focal length: [911.0564926338128, 915.3690426859793]

Principal point: [654.5482352770398, 375.66810190623215]

Distortion model: equidistant

Distortion coefficients: [0.3629375983301243, 1.4225432053119618, -7.572285678161193, 11.997731214099968]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.02 [m]

Spacing 0.005 [m]

IMU configuration

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IMU0:

Model: calibrated

Update rate: 200.0

Accelerometer:

Noise density: 0.012053874856036331

Noise density (discrete): 0.17046753300554618

Random walk: 0.00031754843471509944

Gyroscope:

Noise density: 0.0016943712356424579

Noise density (discrete): 0.023962027811404232

Random walk: 2.3293241428545093e-05

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

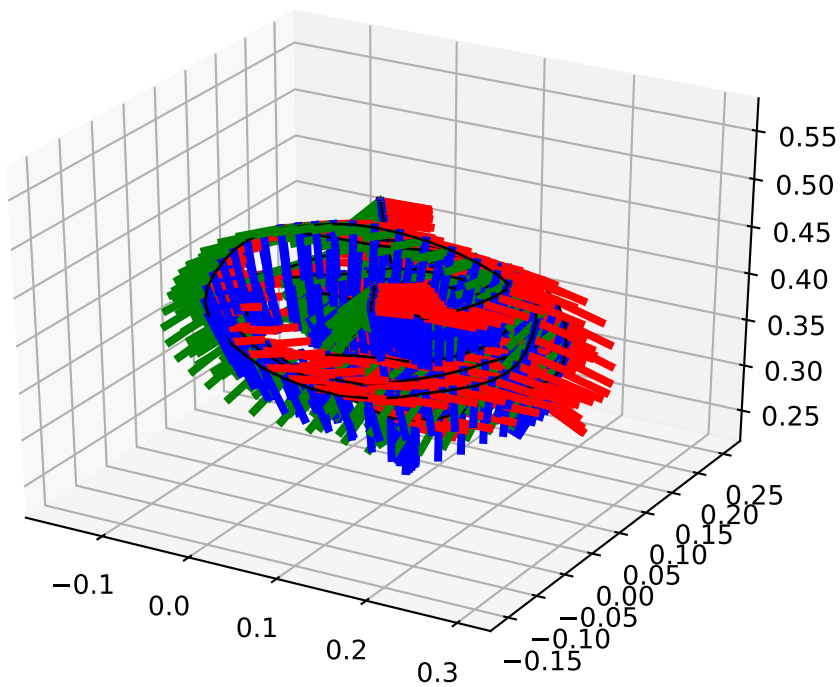
[0. 1. 0. 0.]

[0. 0. 1. 0.]

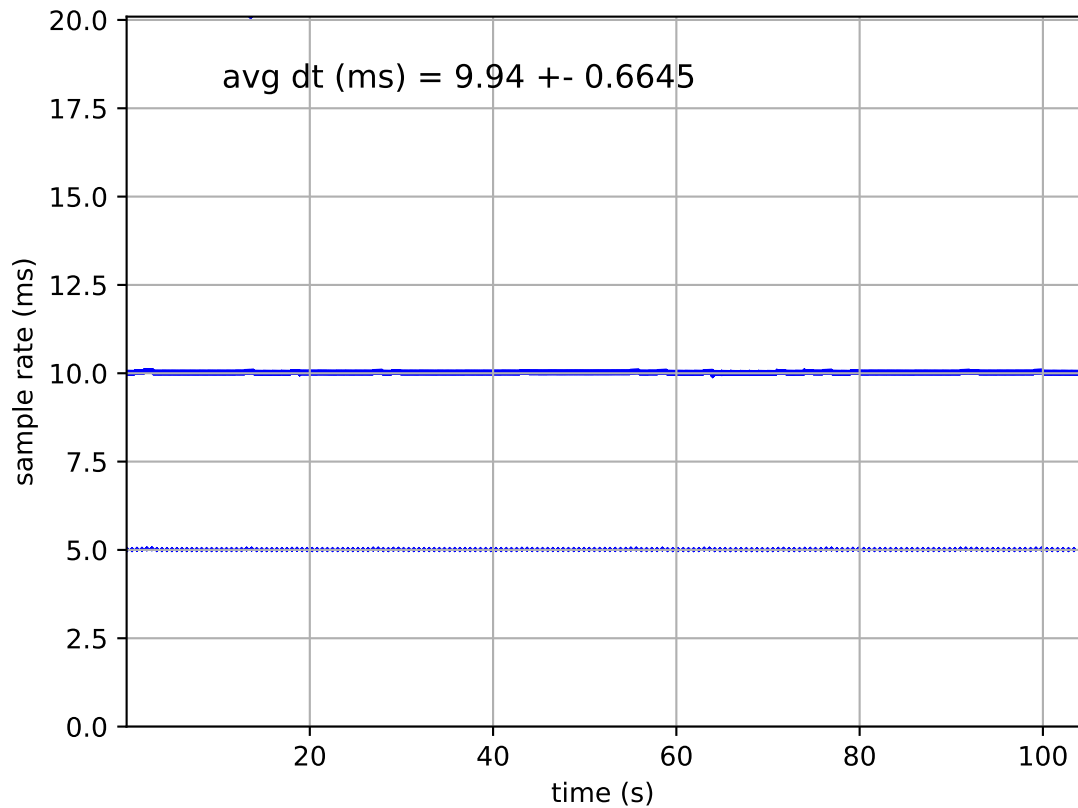
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

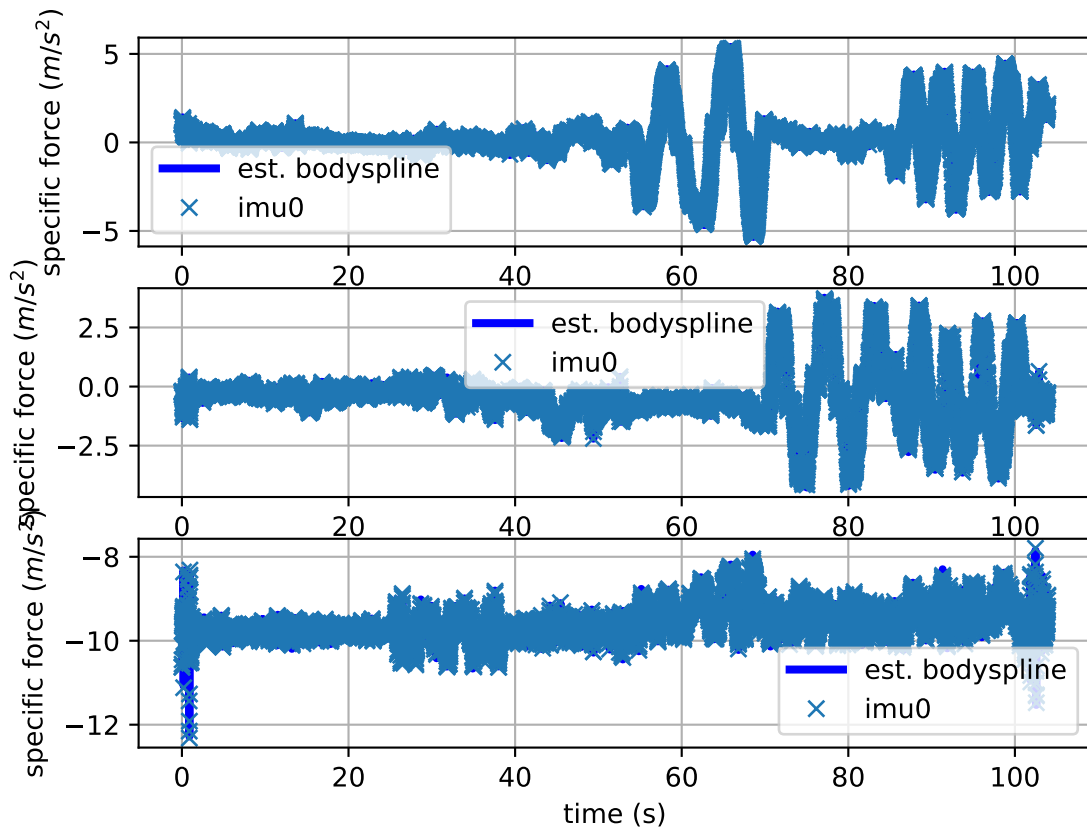
imu0: estimated poses



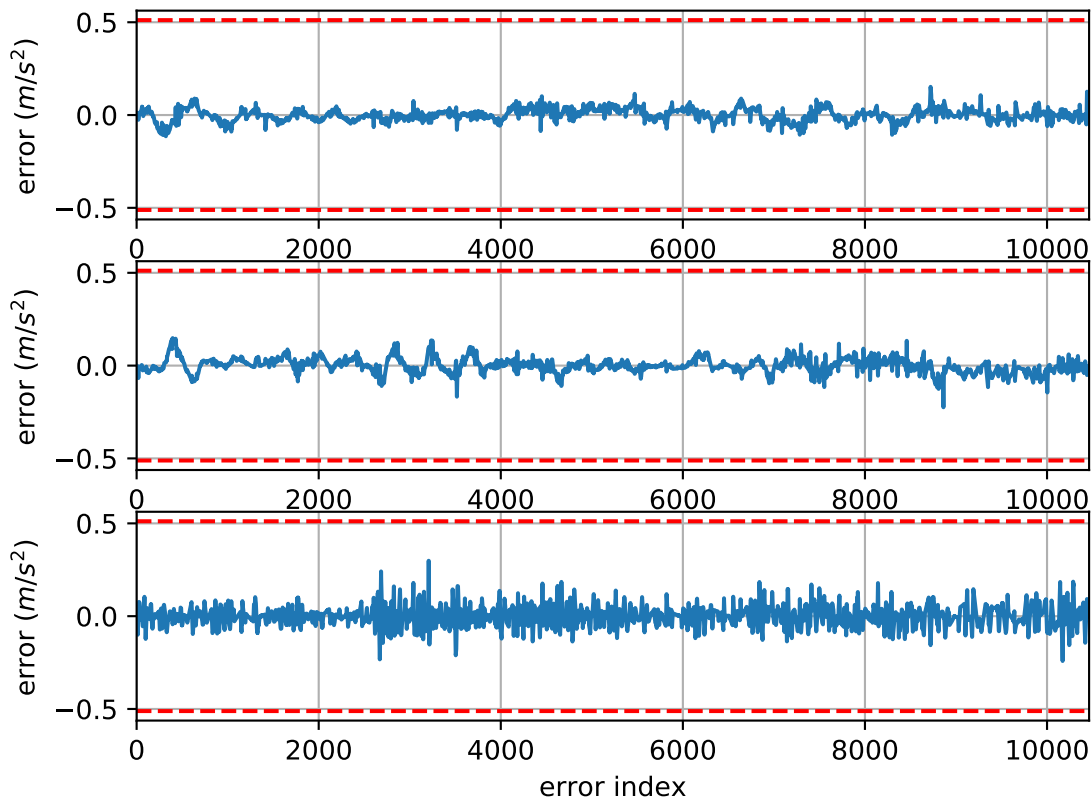
imu0: sample inertial rate



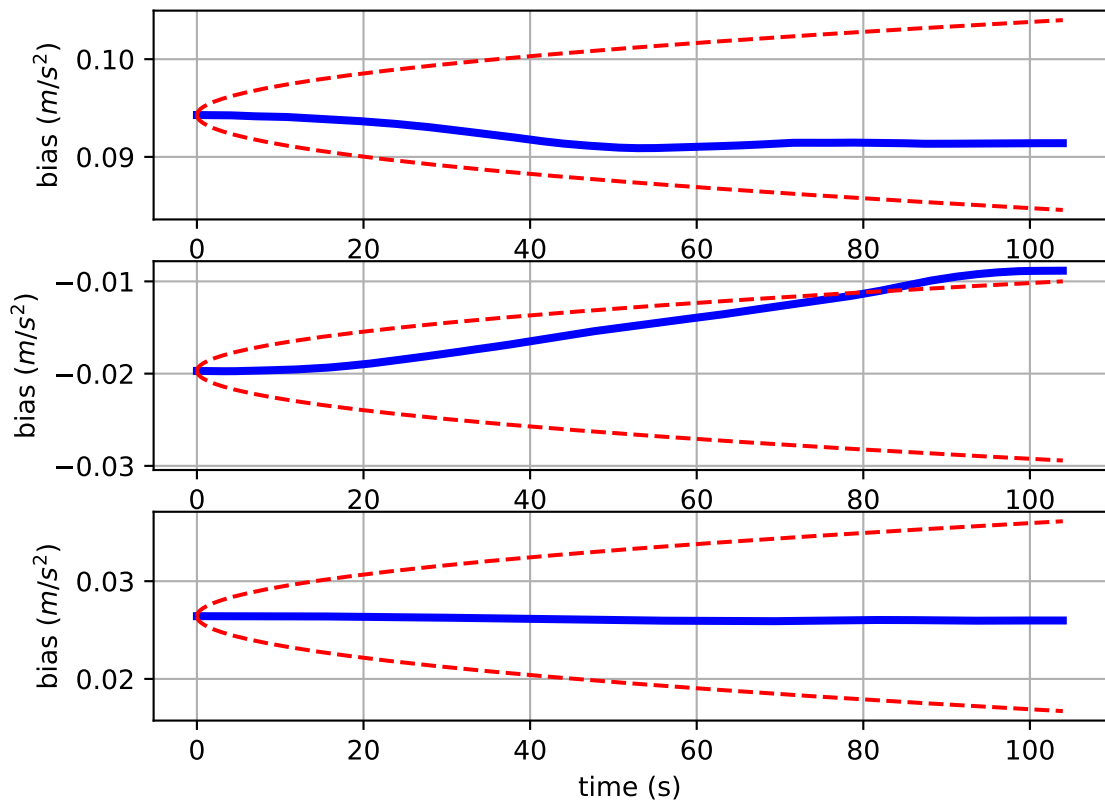
Comparison of predicted and measured specific force (imu0 frame)



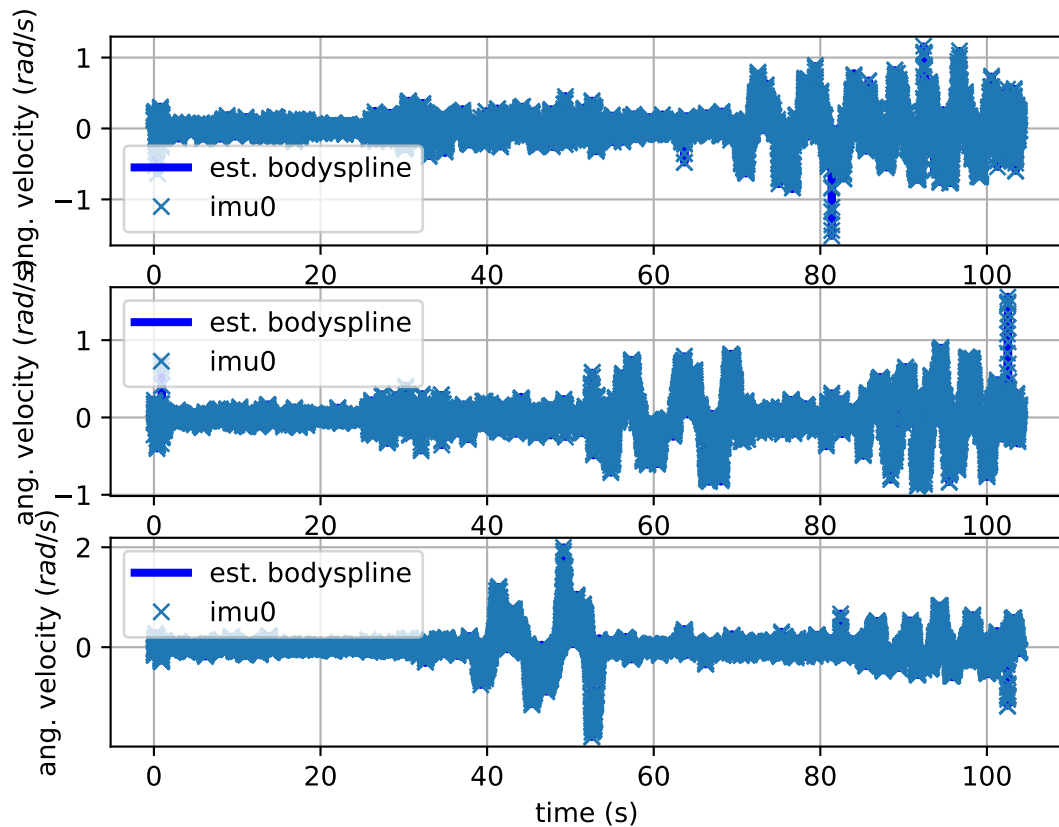
imu0: acceleration error



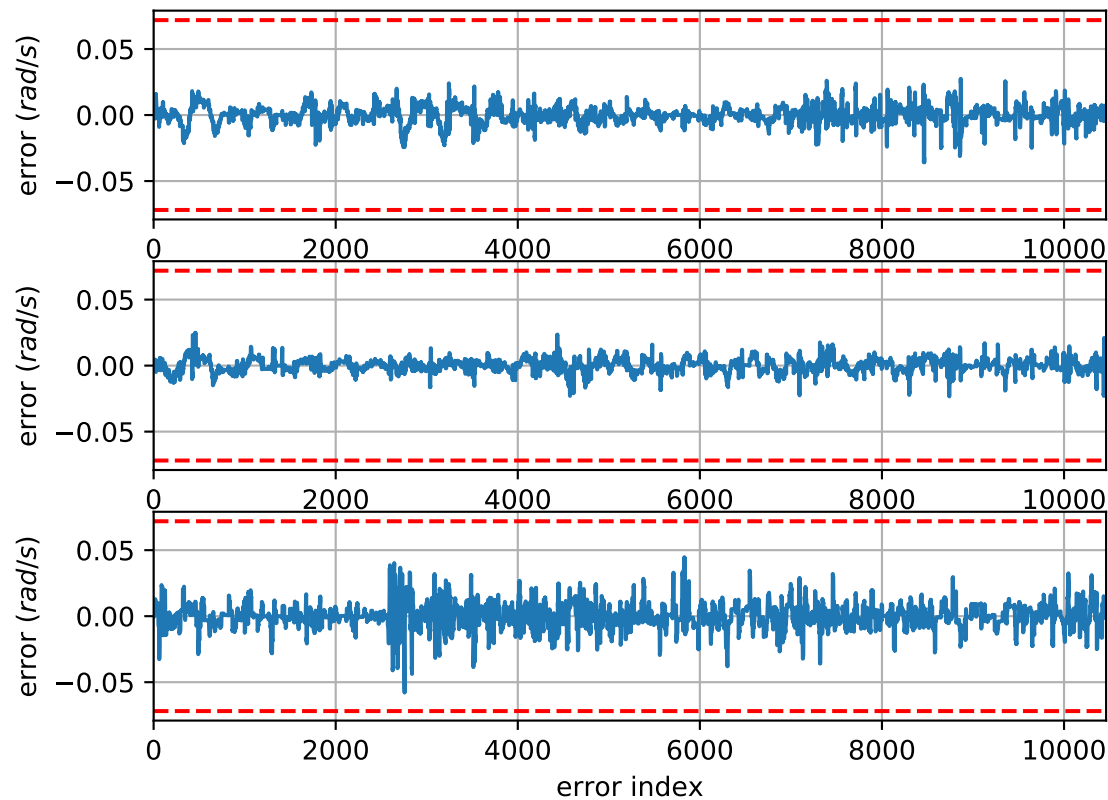
imu0: estimated accelerometer bias (imu frame)



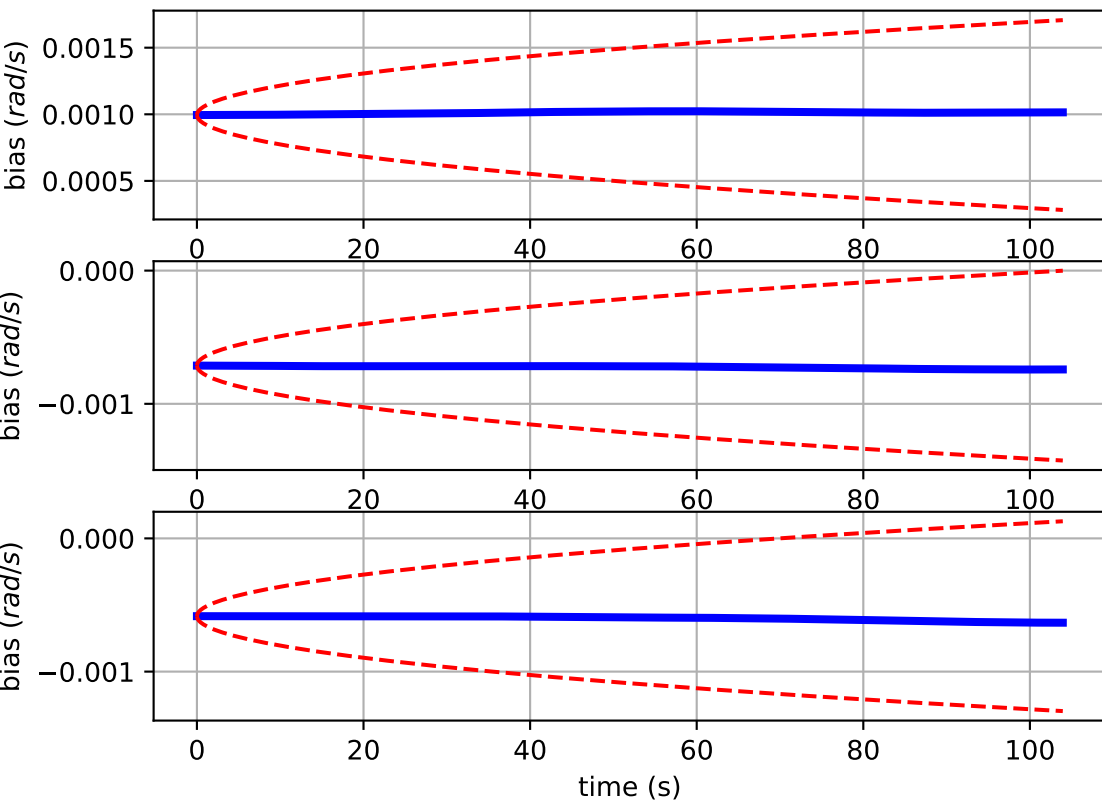
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

