

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.18595474951229762, median 0.13356109005431643, std: 0.22140668539404282
Gyroscope error (imu0): mean 0.20440647196173925, median 0.14987230779842883, std: 0.229197040511077
Accelerometer error (imu0): mean 0.1721418099301209, median 0.1485141612398181, std: 0.1294791969867852

Residuals

Reprojection error (cam0) [px]: mean 0.18595474951229762, median 0.13356109005431643, std:
0.22140668539404285
Gyroscope error (imu0) [rad/s]: mean 0.0035915883117631415, median 0.0026333785999034316, std:
0.004027178806473263
Accelerometer error (imu0) [m/s²]: mean 0.029803834870379905, median 0.025713053320987618, std:
0.022417427862005443

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99874628 -0.04826387 -0.01328422 0.00692883]
[0.0484449 0.99873243 0.01366073 0.00528543]
[0.01260806 -0.01428715 0.99981844 -0.01197046]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99874628 0.0484449 0.01260806 -0.00702527]
[-0.04826387 0.99873243 -0.01428715 -0.00511534]
[-0.01328422 0.01366073 0.99981844 0.01198813]
[0. 0. 0. 1.]]

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)
0.008424534370663726

Gravity vector in target coords: [m/s²]

[9.74612592 -0.66678525 -0.85839956]

Calibration configuration

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cam0

Camera model: pinhole

Focal length: [898.6688804109466, 898.9738808863659]

Principal point: [636.8292946802843, 356.1554967448297]

Distortion model: radtan

Distortion coefficients: [0.10701023140471895, -0.223355254026636, -0.0011639206722372725, 0.0002625123925514004]

Type: checkerboard

Rows

Count: 8

Distance: 0.03 [m]

Cols

Count: 11

Distance: 0.03 [m]

IMU configuration

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IMU0:

Model: calibrated

Update rate: 200.0

Accelerometer:

Noise density: 0.012242518973609421

Noise density (discrete): 0.17313536370088387

Random walk: 0.00039120568570580365

Gyroscope:

Noise density: 0.0012424442465566502

Noise density (discrete): 0.017570815039728363

Random walk: 1.773126703119309e-05

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

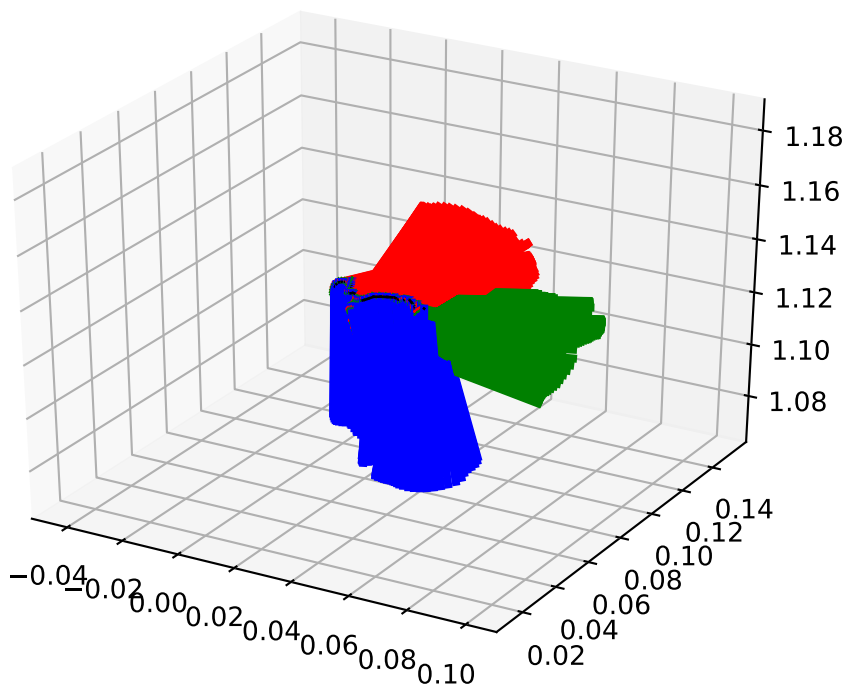
[0. 1. 0. 0.]

[0. 0. 1. 0.]

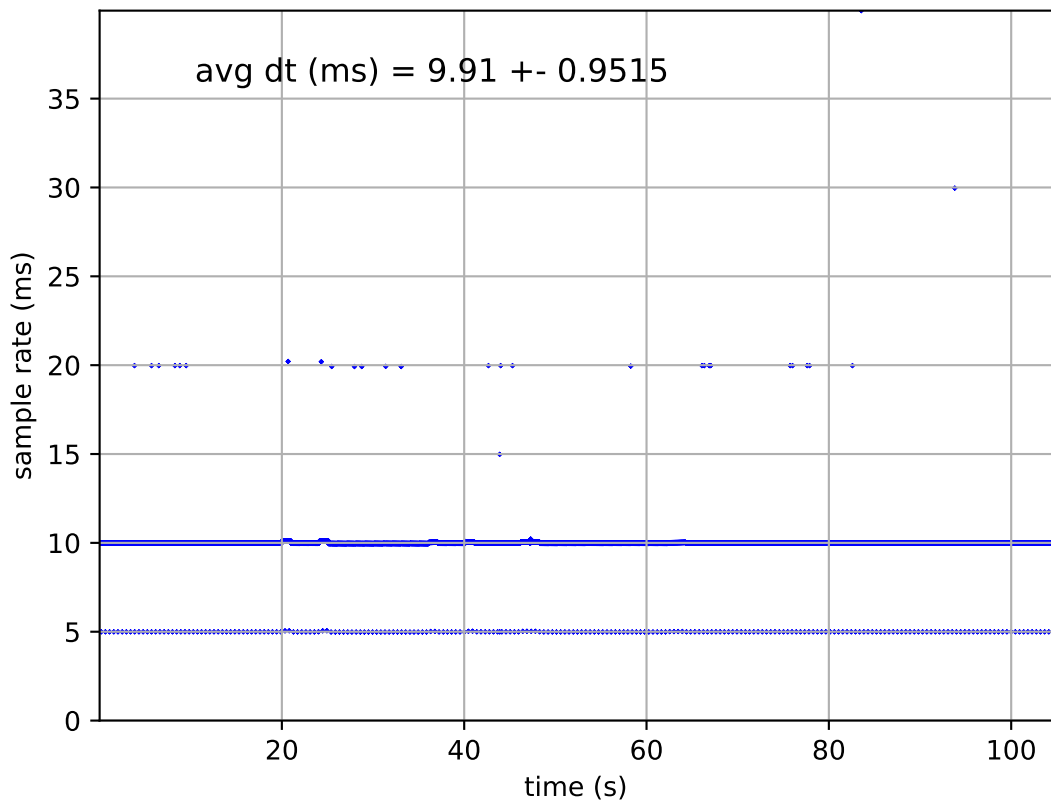
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

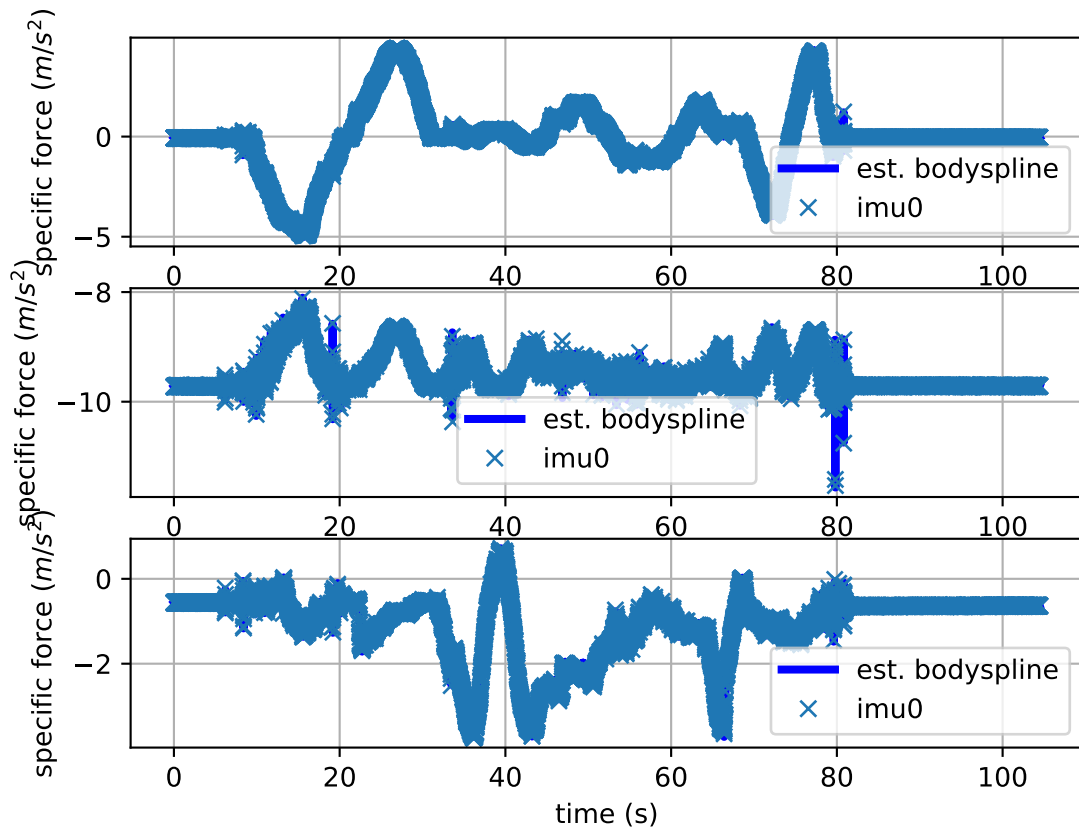
imu0: estimated poses



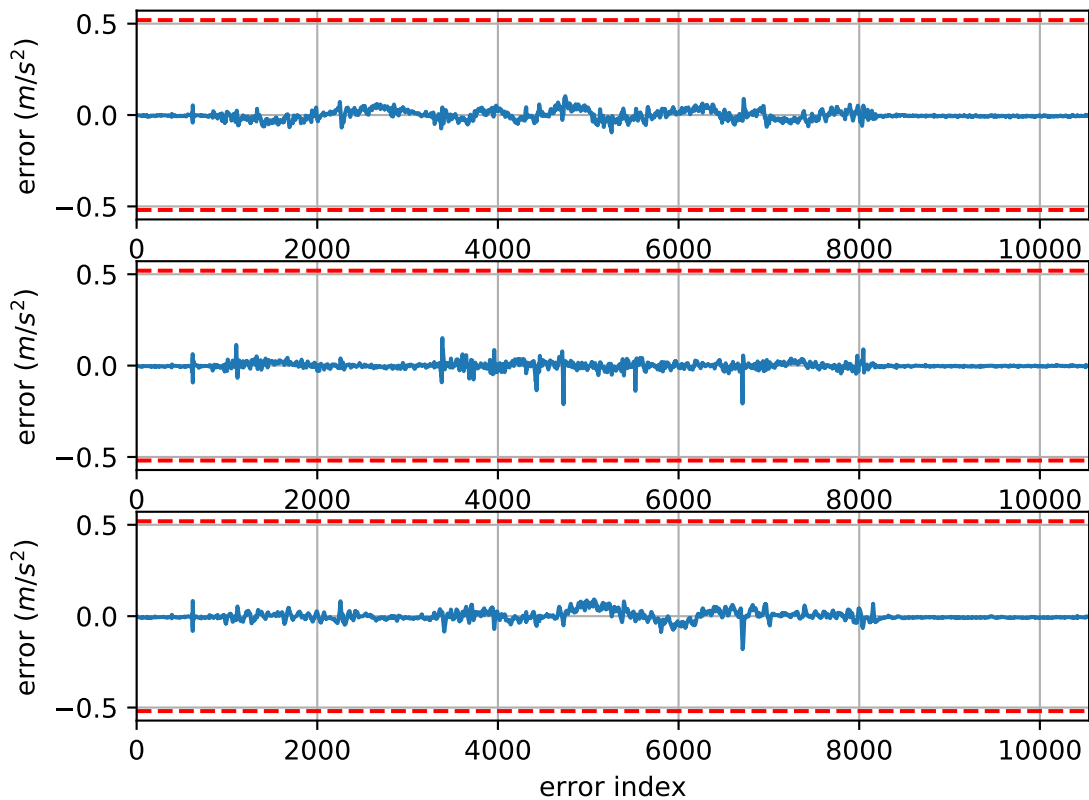
imu0: sample inertial rate



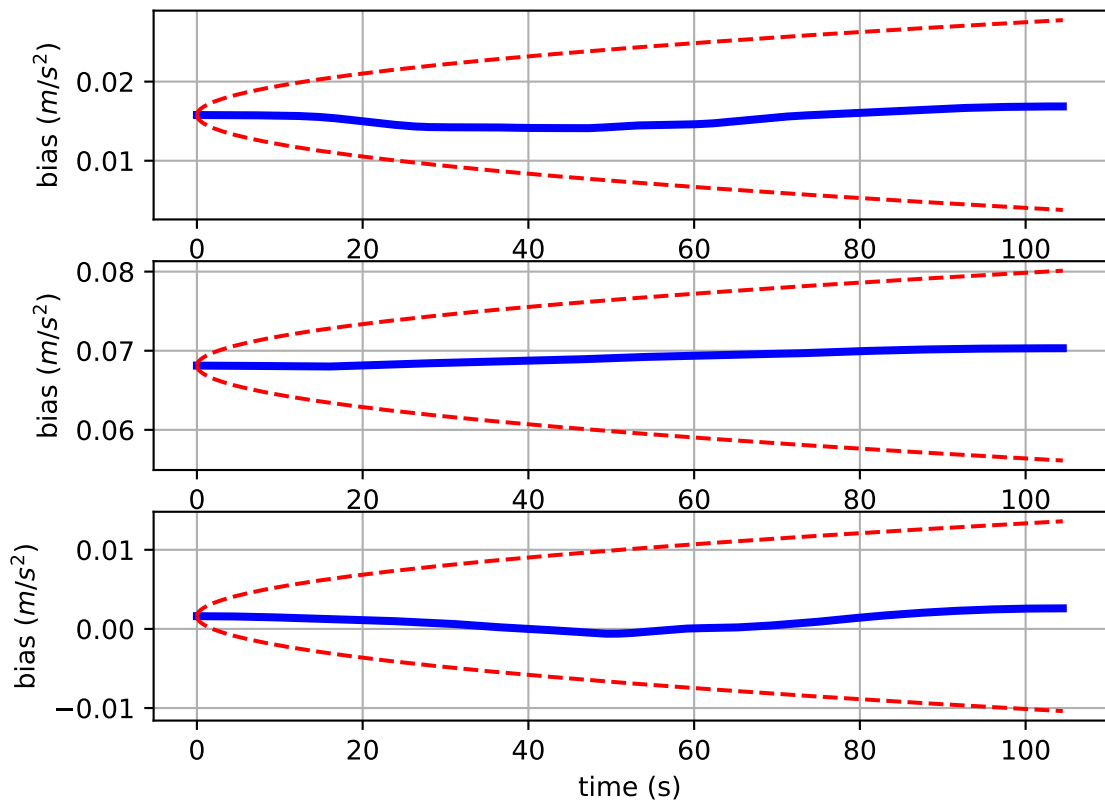
Comparison of predicted and measured specific force (imu0 frame)



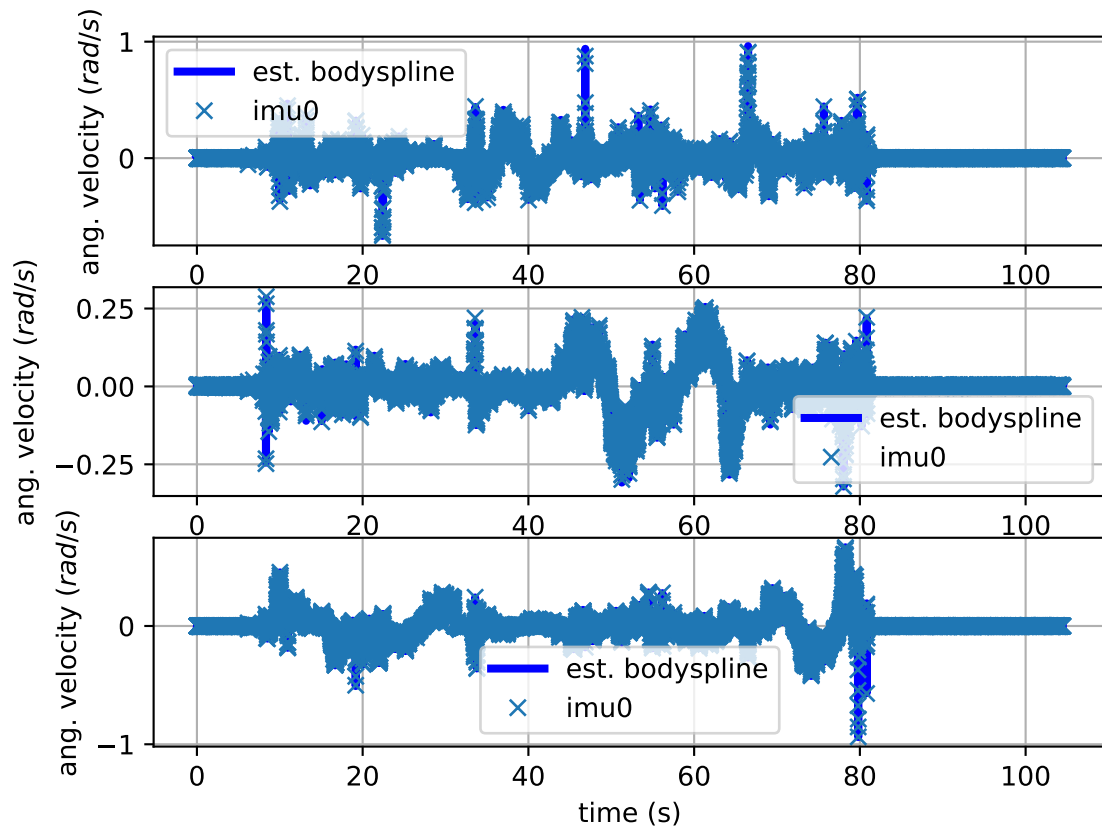
imu0: acceleration error



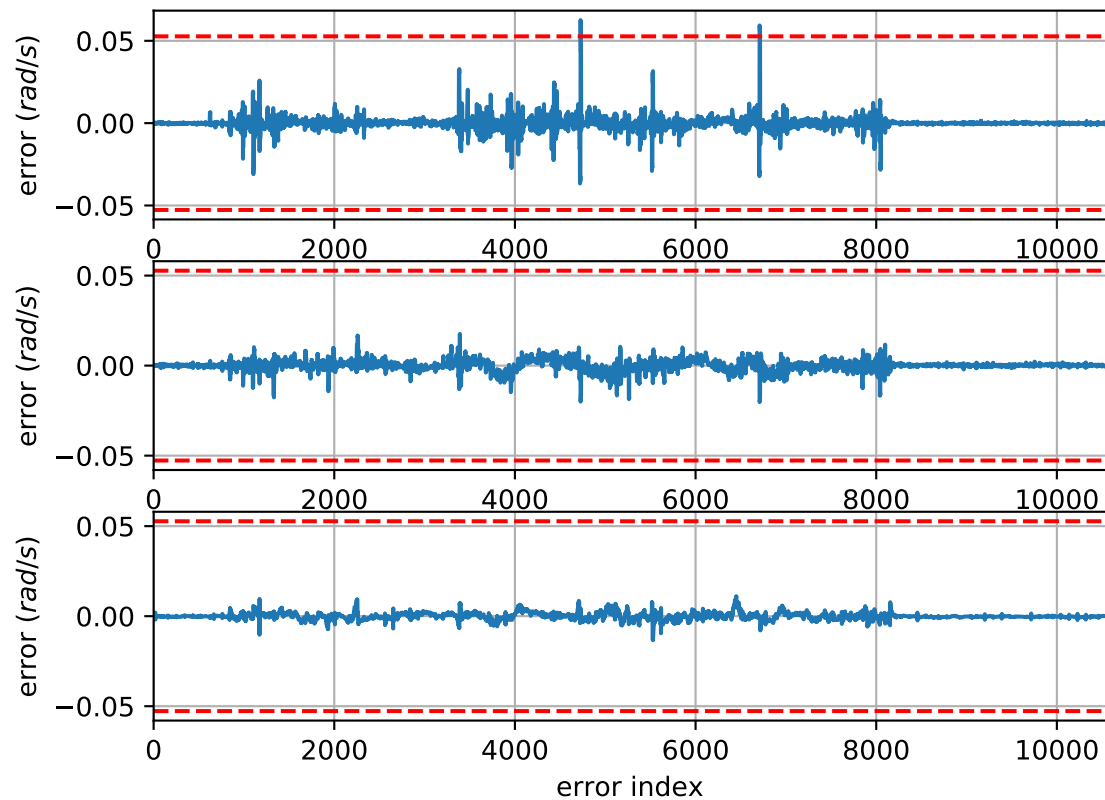
imu0: estimated accelerometer bias (imu frame)



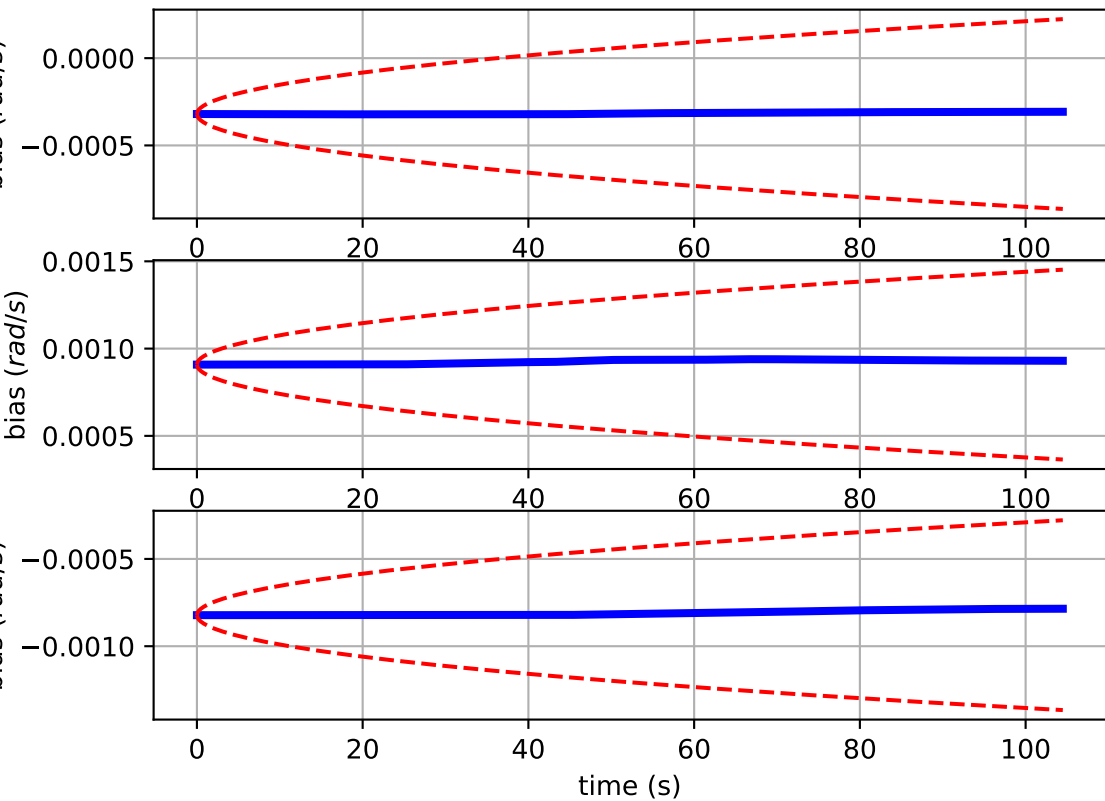
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

