Calibration results
===================
Normalized Residuals
----------------------------
Reprojection error (cam0):     mean 0.3081681390334779, median 0.22876378445549916, std: 0.27650757578322743
Gyroscope error (imu0):        mean 0.5221153809511623, median 0.371147003497152, std: 0.45564872857662425
Accelerometer error (imu0):    mean 0.48125991776580146, median 0.35389970388273184, std: 0.4472366391878367

Residuals
----------------------------
Reprojection error (cam0) [px]:     mean 0.3081681390334779, median 0.22876378445549916, std:
0.27650757578322743
Gyroscope error (imu0) [rad/s]:     mean 0.0022511670750783976, median 0.00160024765553679, std:
0.001964587623724833
Accelerometer error (imu0) [m/s^2]: mean 0.13036885123464292, median 0.09586814971348648, std:
0.12115226040772095

Transformation (cam0):
----------------------
T_ci:  (imu0 to cam0):
[[-0.48743663 -0.87292088  0.02036336 -0.01861757]
 [-0.01279532 -0.01617801 -0.99978725 -0.03381522]
 [ 0.87306461 -0.48759348 -0.00328355 -0.05364868]
 [ 0.         0.         0.         1.       ]]

T_ic:  (cam0 to imu0):
[[-0.48743663 -0.01279532  0.87306461  0.03733121]
 [-0.87292088 -0.01617801 -0.48759348 -0.04295747]
 [ 0.02036336 -0.99978725 -0.00328355 -0.03360507]
 [ 0.         0.         0.         1.       ]]

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)
-0.0010634587095305573


Gravity vector in target coords: [m/s^2]
[ 0.00953329 -9.73013082 -1.22183721]

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

cam0
-----
Camera model: pinhole
Focal length: [403.02592926702755, 402.82651024780995]
Principal point: [321.9293377230647, 242.79122225360175]
Distortion model: radtan
Distortion coefficients: [-0.35138294801964, 0.1120888263383309, -0.0005511137245284194, 0.0009997109284453811]
Type: aprilgrid
Tags:
Rows: 6
Cols: 6
Size: 0.088 [m]
Spacing 0.026399999999999996 [m]



IMU configuration
=================

IMU0:
----------------------------
Model: calibrated
Update rate: 100
Accelerometer:
Noise density: 0.027089073164427782
Noise density (discrete): 0.2708907316442778
Random walk: 0.0026405437265548015
Gyroscope:
Noise density: 0.0004311627577370619
Noise density (discrete): 0.0043116275773706185
Random walk: 5.5971879319209416e-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]
```
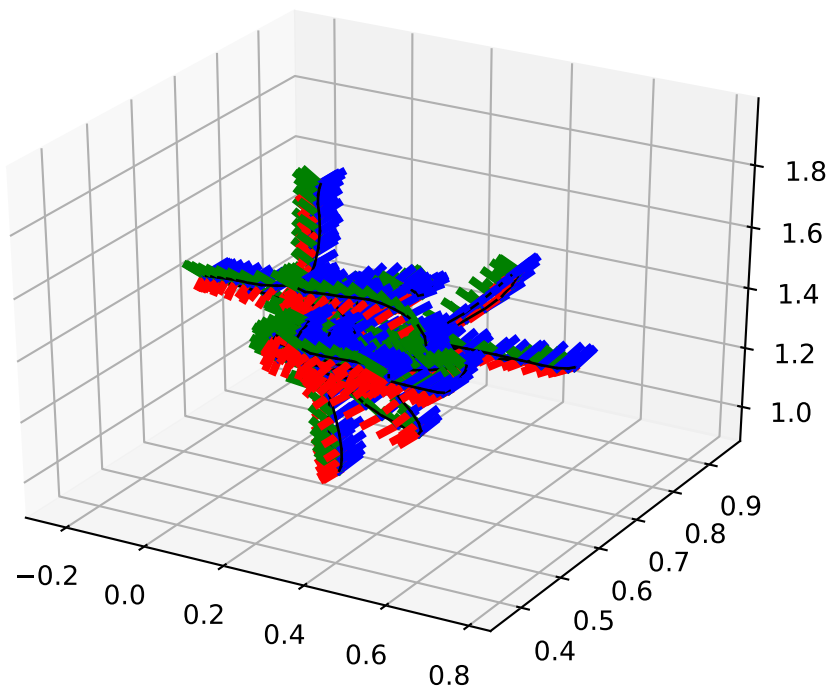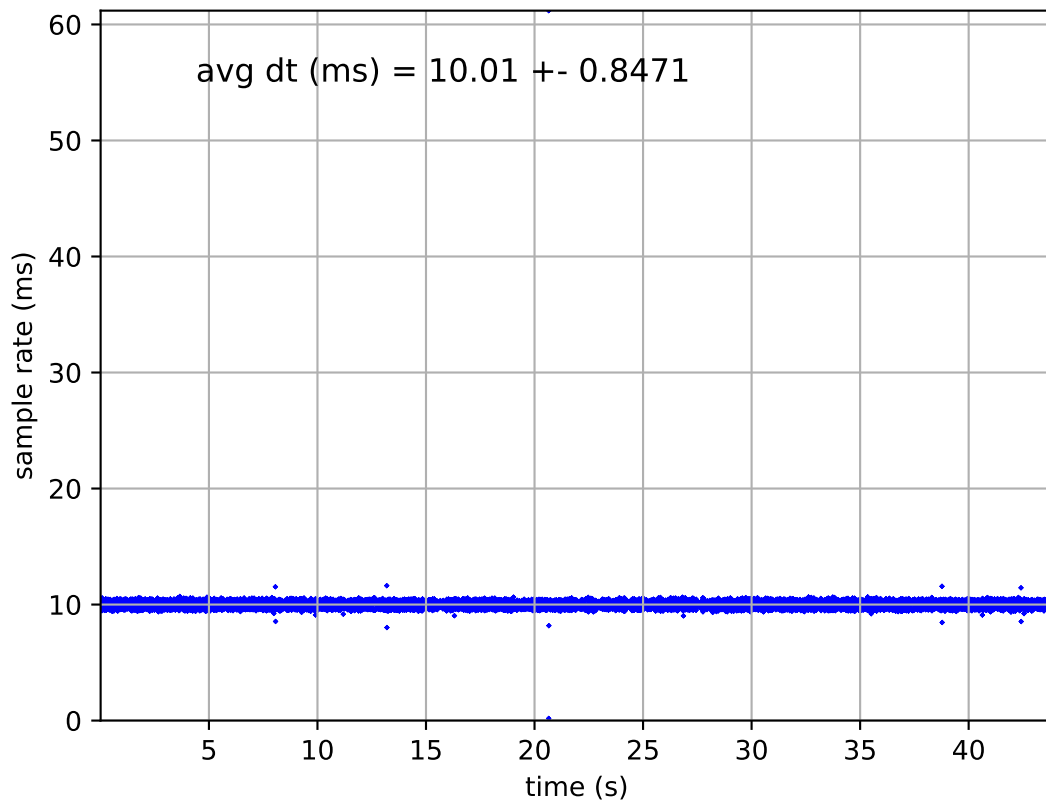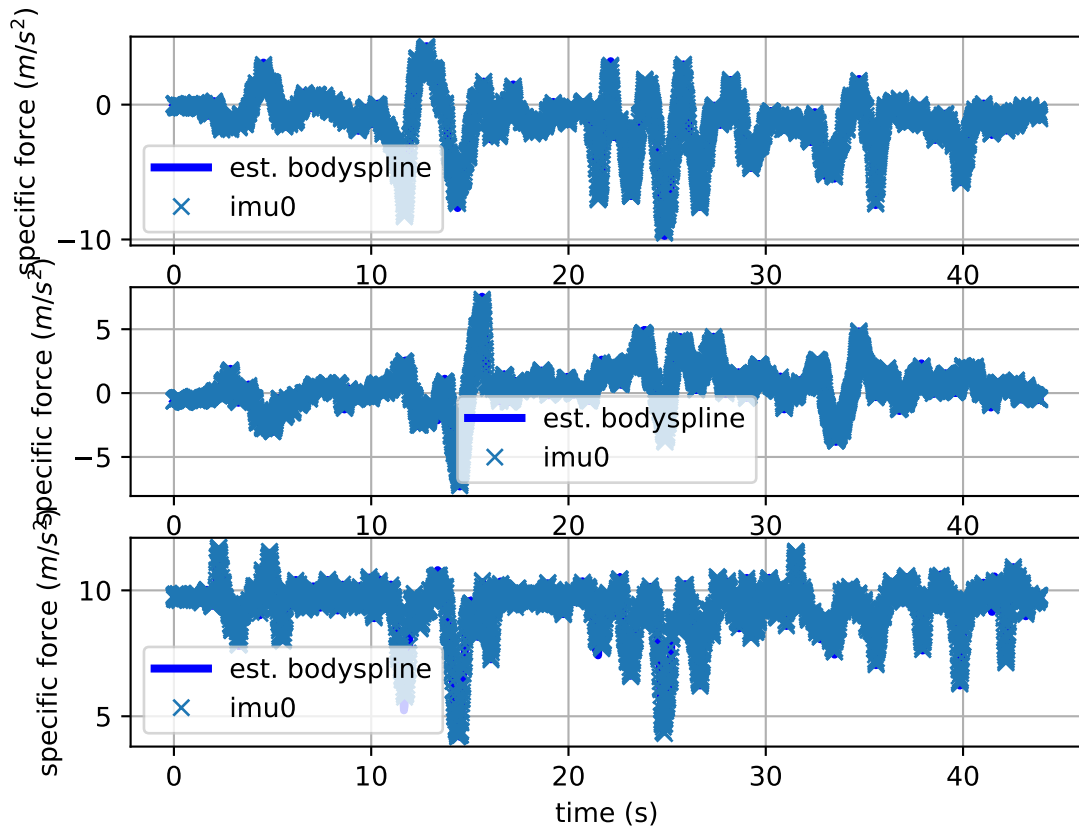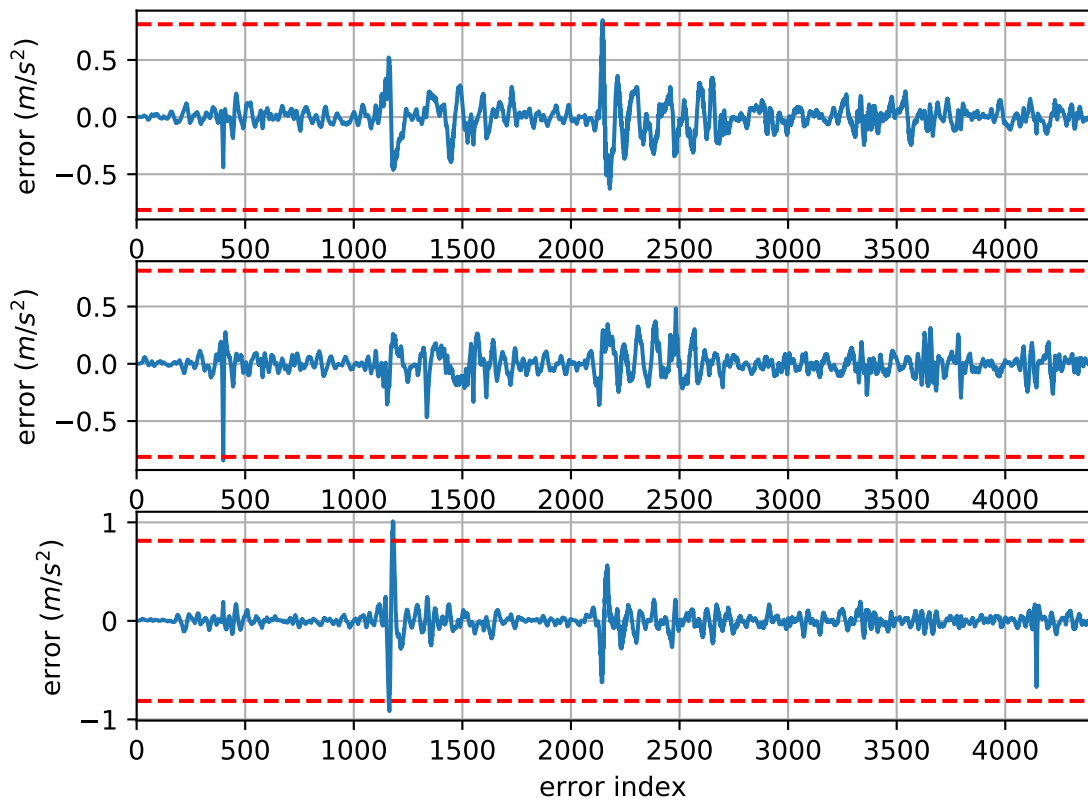
imu0: estimated poses

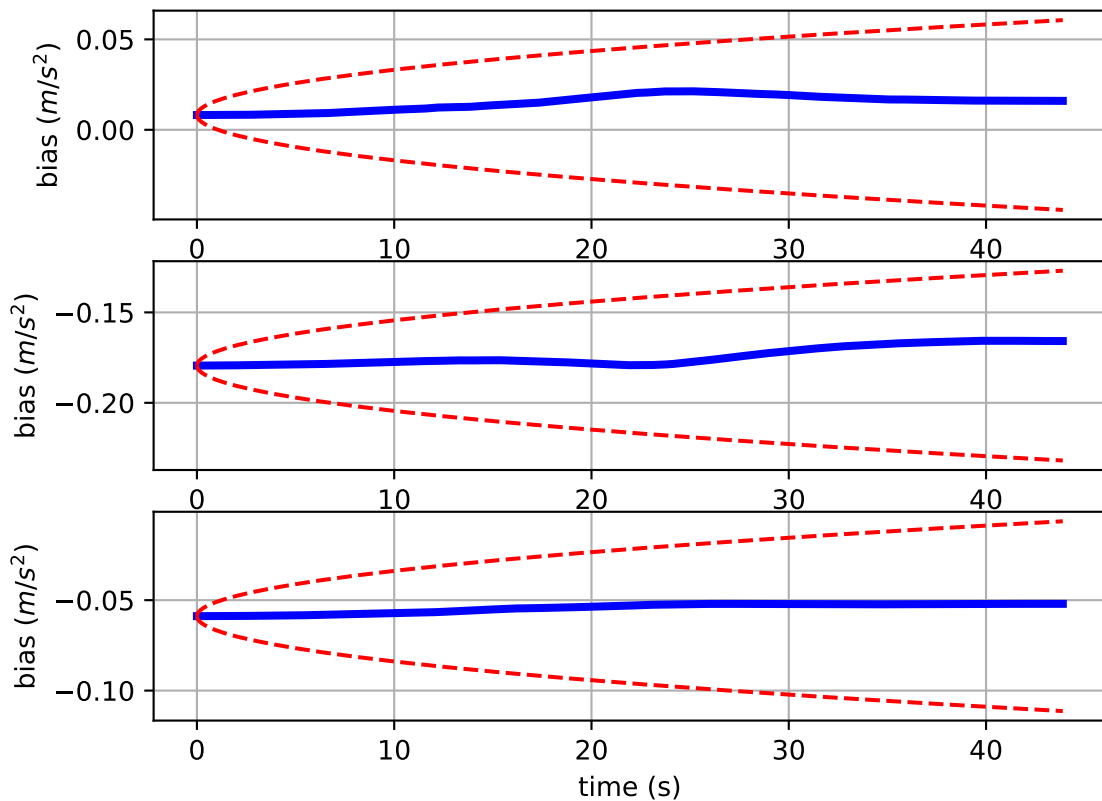imu0: sample inertial rate

avg dt (ms) = 10.01 +- 0.8471

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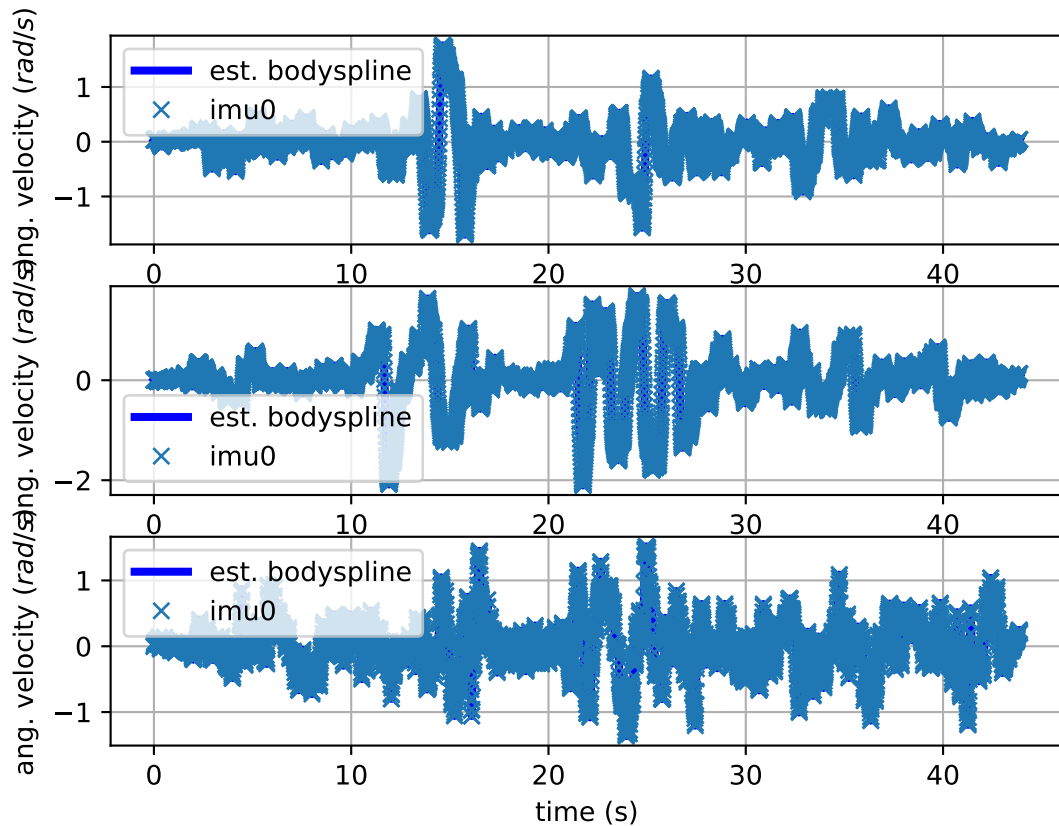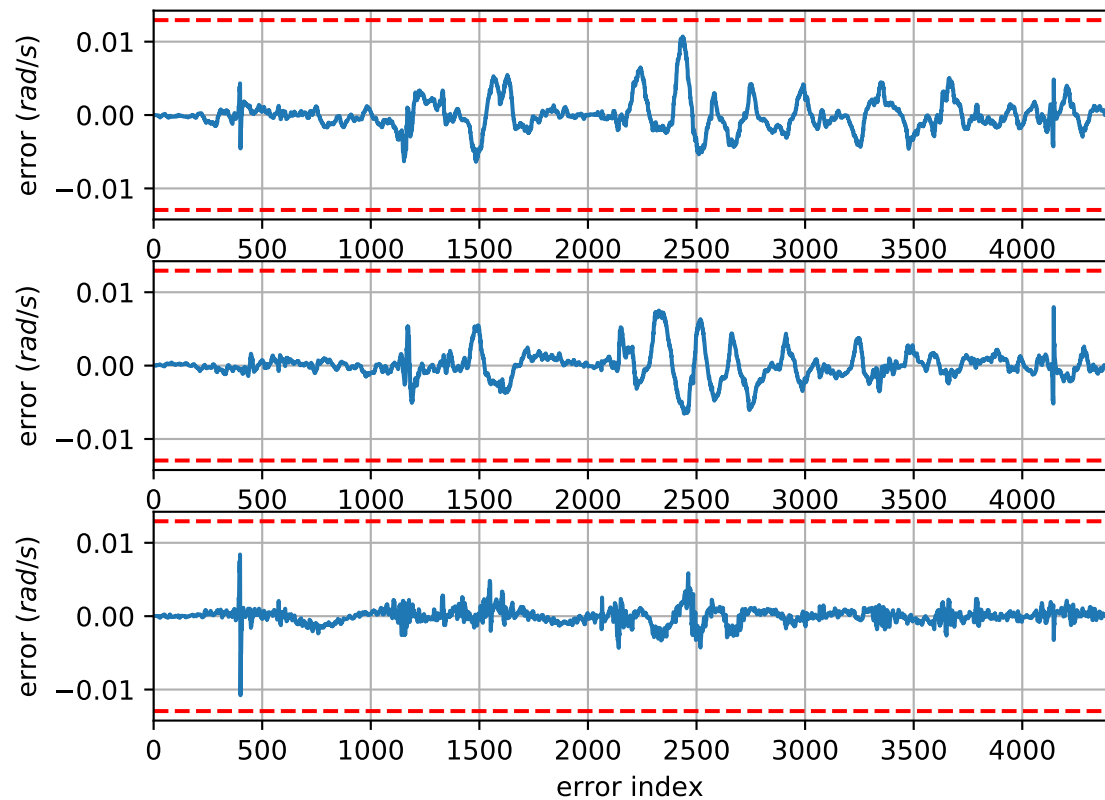
imu0: acceleration error
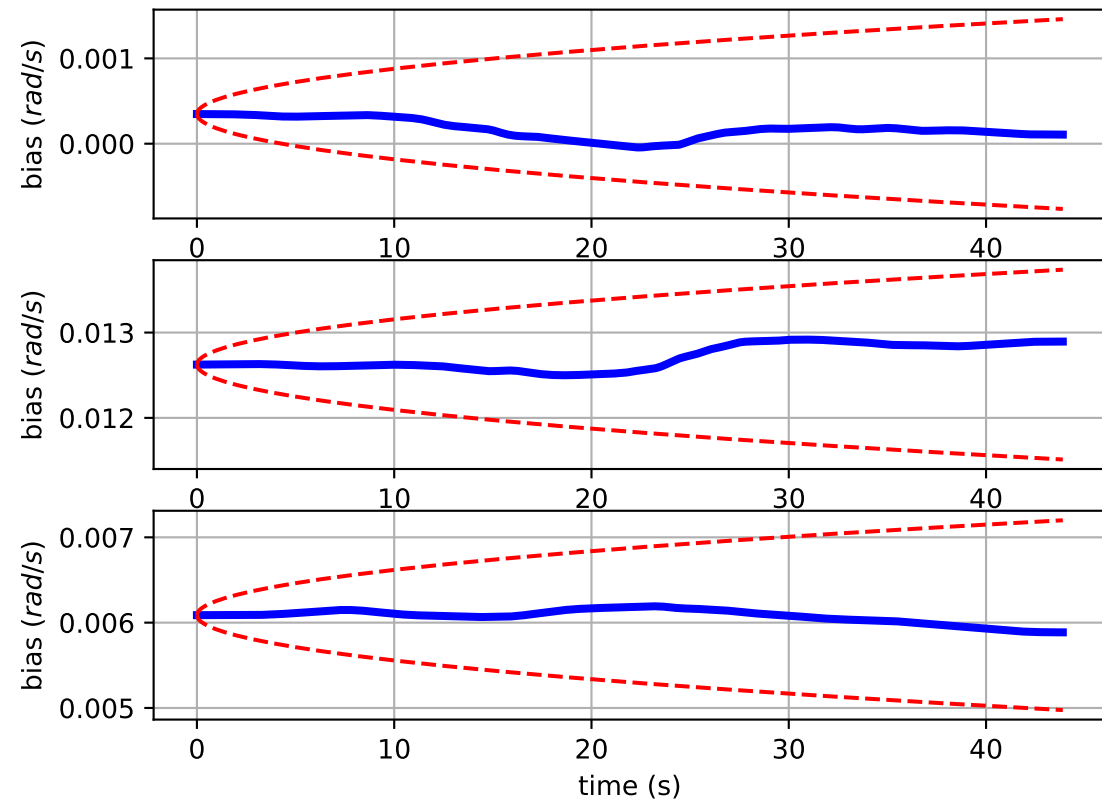
imu0: estimated accelerometer bias (imu frame)

Comparison of predicted and measured angular velocities (body frame)

imu0: angular velocities error

imu0: estimated gyro bias (imu frame)

cam0: reprojection errors