

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.313413071191, median 0.240352323155, std: 0.265481622279

Gyroscope error (imu0): mean 0.164217744238, median 0.135172927174, std: 0.116526355051

Accelerometer error (imu0): mean 0.183681196221, median 0.150071320039, std: 0.16543004173

Residuals

Reprojection error (cam0) [px]: mean 0.313413071191, median 0.240352323155, std: 0.265481622279

Gyroscope error (imu0) [rad/s]: mean 0.0245546502695, median 0.0202117254019, std: 0.0174235976067

Accelerometer error (imu0) [m/s²]: mean 0.00948916279618, median 0.00775284142405, std: 0.00854628905758

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.03765457 -0.99914152 0.01727286 -0.00546145]

[-0.99615369 0.03616218 -0.07981302 -0.01301155]

[0.07911988 -0.02021175 -0.99666019 -0.0099212]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.03765457 -0.99615369 0.07911988 -0.01238219]

[-0.99914152 0.03616218 -0.02021175 -0.00518676]

[0.01727286 -0.07981302 -0.99666019 -0.01083222]

[0. 0. 0. 1.]]

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

-0.0407343573035

Gravity vector in target coords: [m/s²]

[9.78672664 0.47435567 0.40421683]

Calibration configuration

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cam0

Camera model: pinhole

Focal length: [659.6338845739796, 878.8153792582235]

Principal point: [321.5458975343683, 247.25875485679262]

Distortion model: equidistant

Distortion coefficients: [0.3605195032951579, 2.7662346602731382, -17.578399824063048, 36.5408151510285]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.02 [m]

Spacing 0.006 [m]

IMU configuration

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IMU0:

Model: calibrated

Update rate: 100.0

Accelerometer:

Noise density: 0.00516610463748

Noise density (discrete): 0.0516610463748

Random walk: 0.000995698308

Gyroscope:

Noise density: 0.0149524951664

Noise density (discrete): 0.149524951664

Random walk: 0.000844715901

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

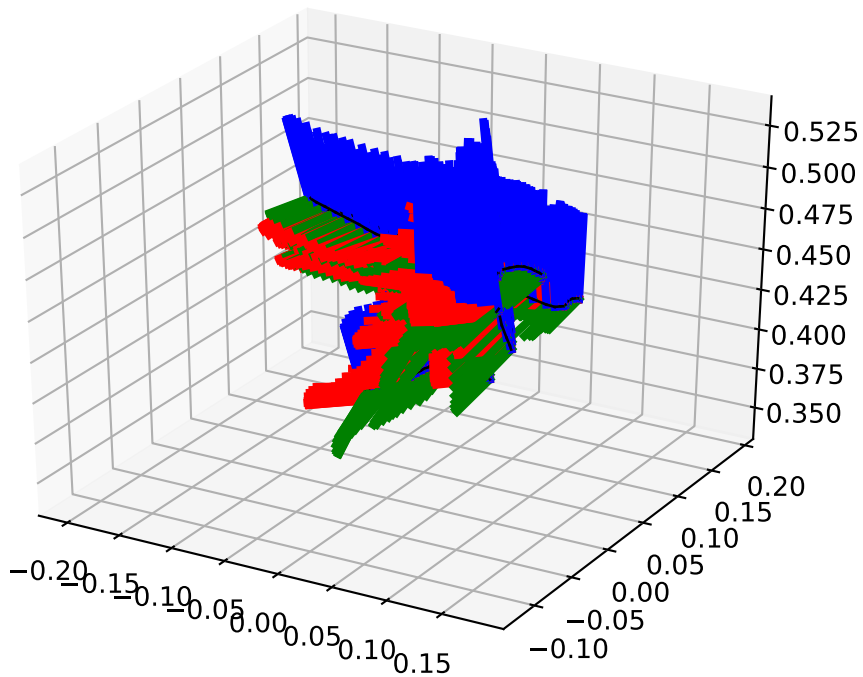
[0. 1. 0. 0.]

[0. 0. 1. 0.]

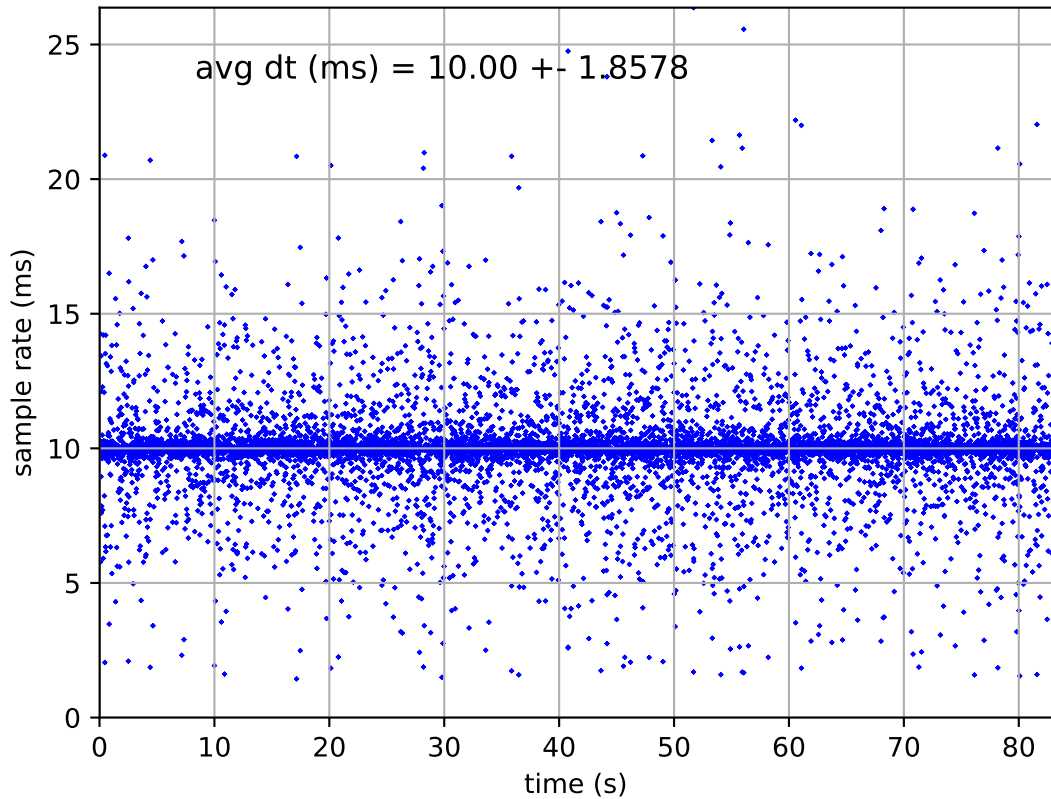
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

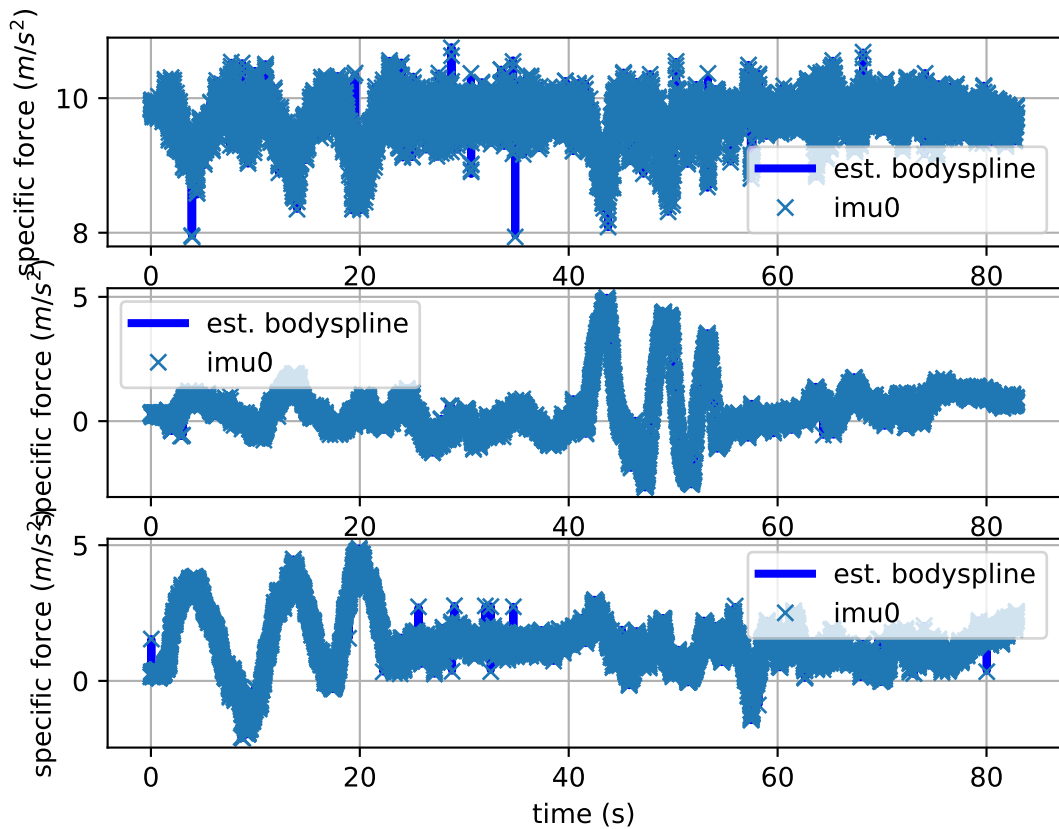
imu0: estimated poses



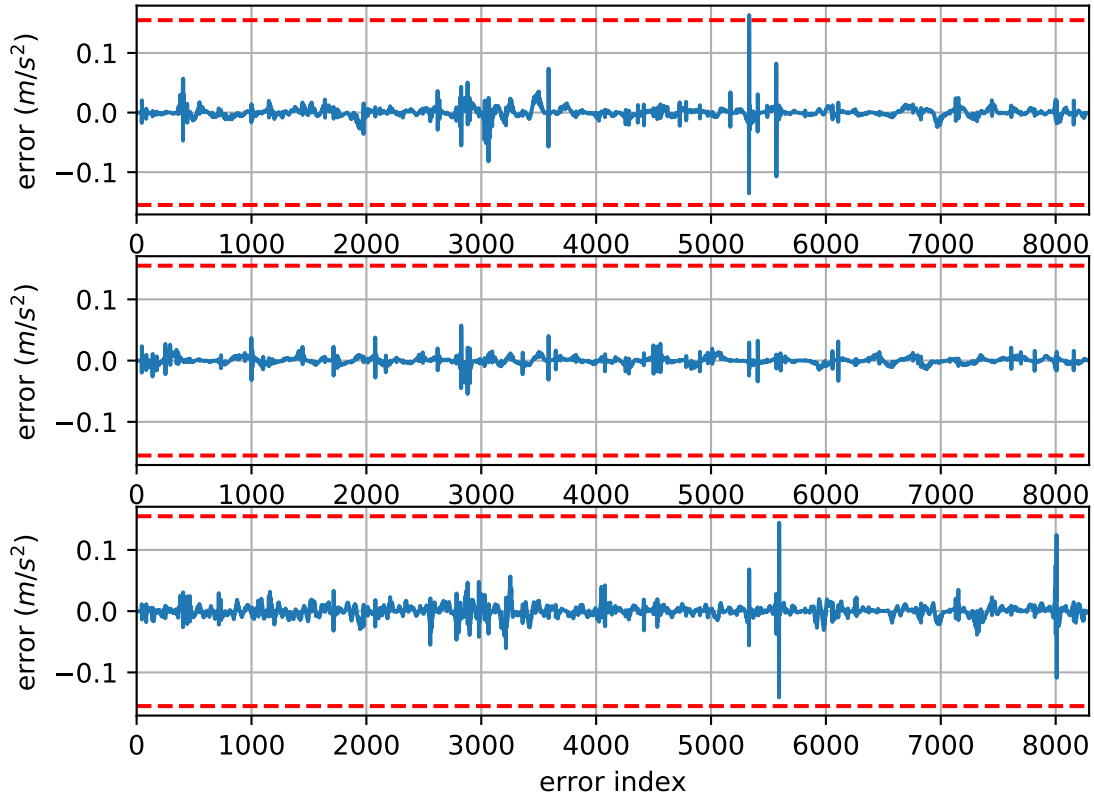
imu0: sample inertial rate



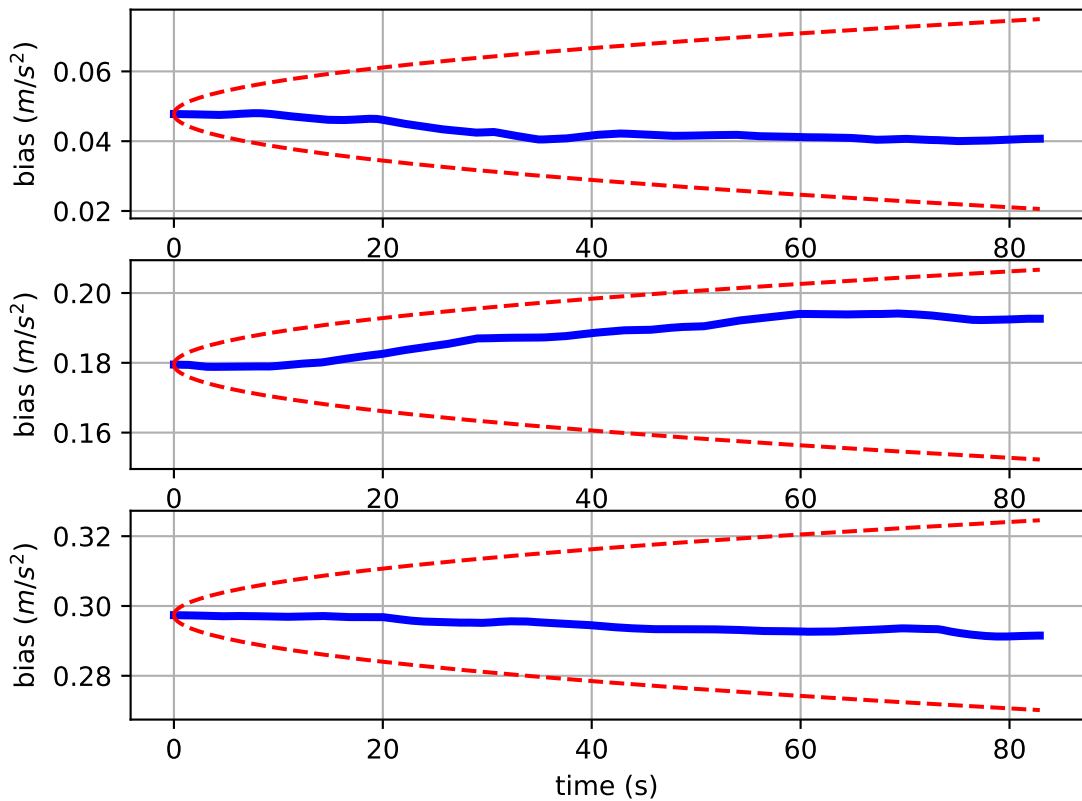
Comparison of predicted and measured specific force (imu0 frame)



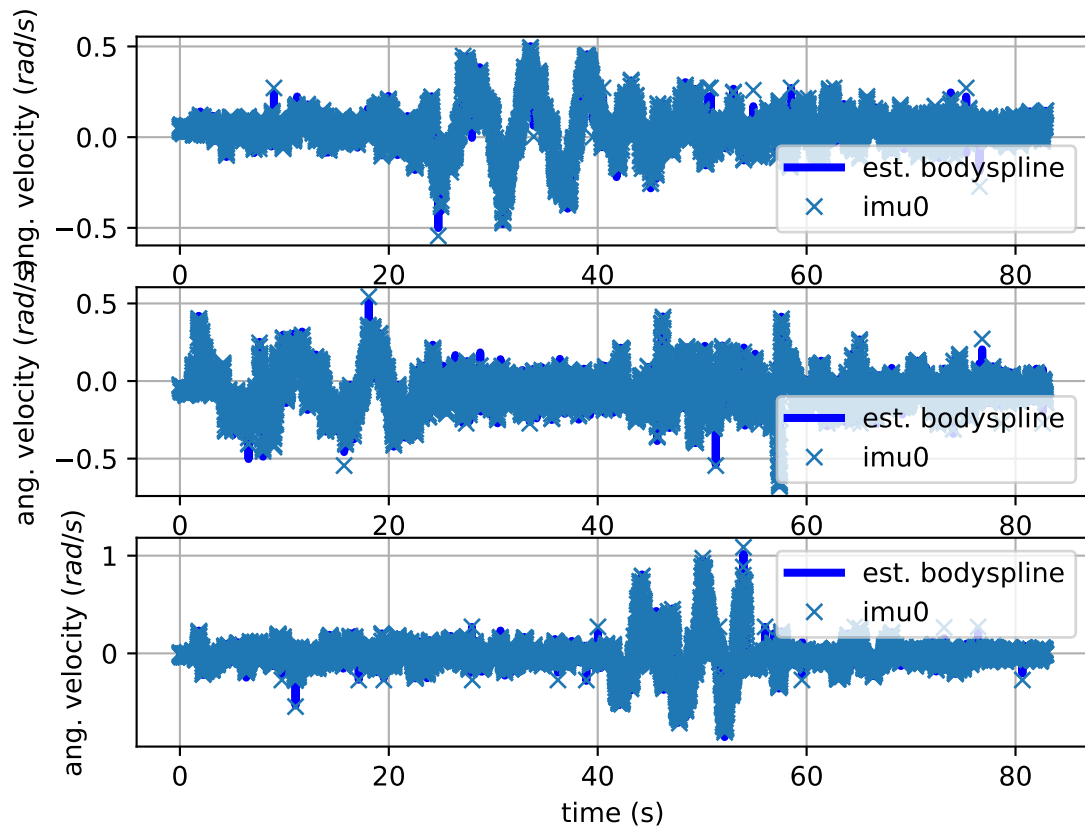
imu0: acceleration error



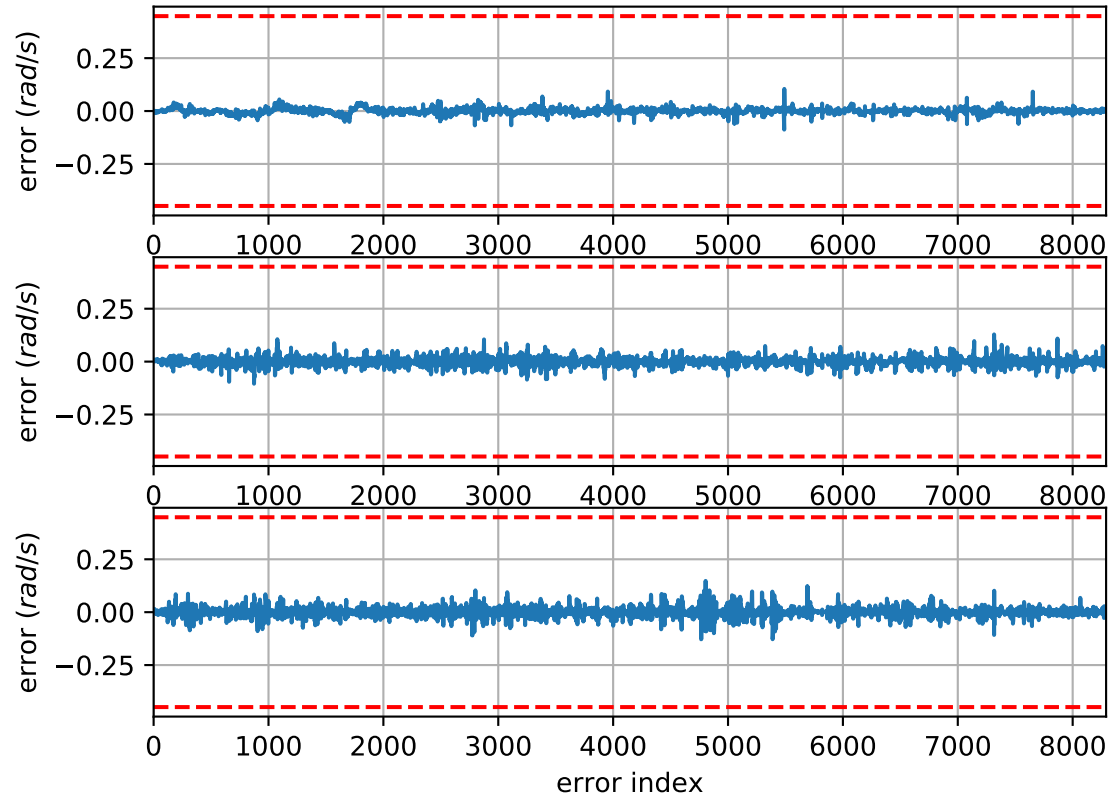
imu0: estimated accelerometer bias (imu frame)



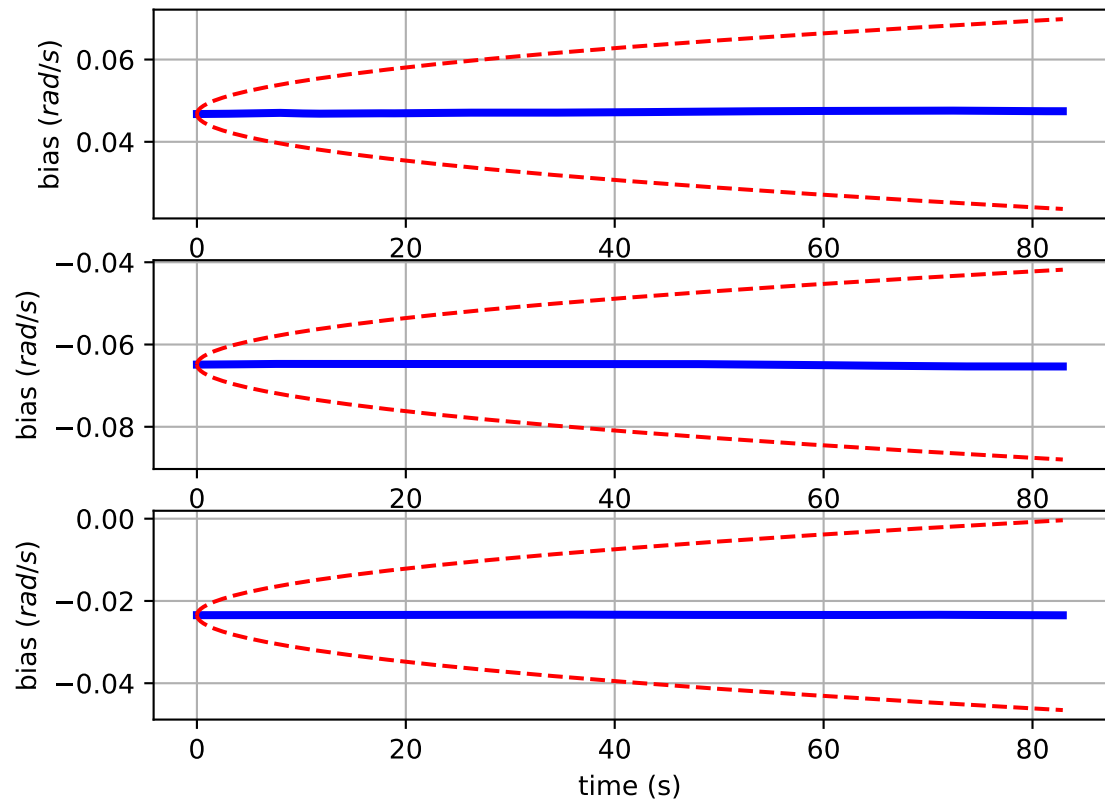
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

