Package 'imuf'

October 17, 2024

Title Estimate Orientation of an Inertial Measurement Unit

Version 0.2.1

Description Estimate the orientation of an inertial measurement unit
(IMU) with a 3-axis accelerometer and a 3-axis gyroscope using a
complementary filter. 'imuf' takes an IMU's accelerometer and gyroscope
readings, time duration, its initial orientation, and a gain factor as
inputs, and returns an estimate of the IMU's final orientation.

License GPL (>= 3)

Encoding UTF-8

RoxygenNote 7.3.2

LinkingTo Rcpp, BH

Imports Rcpp

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

URL https://github.com/gitboosting/imuf,
https://gitboosting.github.io/imuf/

BugReports https://github.com/gitboosting/imuf/issues

NeedsCompilation yes

Author Felix Chan [aut, cre, cph]

Maintainer Felix Chan <chanfelix@gmail.com>

Repository CRAN

Date/Publication 2024-10-17 12:20:07 UTC

Contents

---

compUpdate	*'compUpdate' update orientation with 3-axis acc and gyr data*

Description

'compUpdate' update orientation with 3-axis acc and gyr data

Usage

```
compUpdate(acc, gyr, dt, initQuat, gain)
```

Arguments

acc	A numeric 3-vector of 3-axis accelerometer readings in g
gyr	A numeric 3-vector of 3-axis gyroscope readings in rad/sec
dt	A numeric of time duration in sec
initQuat	A numeric 4-vector of the starting orientation in quaternion
gain	A numeric gain factor between 0 and 1

Value

A numeric 4-vector of the ending orientation in quaternion

Examples

```
compUpdate(c(0, 0, -1), c(1, 0, 0), 0.1, c(1, 0, 0, 0), 0.1)
```

Index