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7  *
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10 *****
11 * Este sketch demonstra o uso das bibliotecas <Kalman.h>, <Kalman.X.h> e <I2C_Write_Read.h> para operação de um MPU6050*
12 * (https://invensense.tdk.com/download-pdf/mpu-6500-datasheet/) usando o filtro de Kalman. Adaptação do excelente
13 * trabalho de Kristian Sloth Lauszus (https://lauszus.com/) através da licença "License version 2 (GPL2)" do GNU.
14 * *****/
15
16 #include <Wire.h> // Biblioteca I2C
17 #include <Kalman.h> // Biblioteca Filtro de Kalman
18 #include <Kalman_X.h> // Biblioteca Filtro de Kalmann para eixo X do MPU6050
19
20 double AnguloX; // Angulo no eixo X corrigido pelo Filtro de Kalmann
21
22 // -----
23
24 void setup()
25 {
26   Serial.begin(115200);
27   while (!Serial);
28
29   Wire.begin();
30   Wire.setClock(400000UL); // I2C a 400 KHz
31   Wire.setWireTimeout(3000,true); // Wire timeout com reset - 3000 microssegundos
32   Wire.clearWireTimeoutFlag(); // Limpa o flag de timeout
33
34   Kalman_X_begin(0x68); // Inicializa processo de filtragem
35 }
36
37 // -----
38
39 void loop()
40 {
41   Kalman_X_run(&AnguloX); // Executa o processo de filtragem
42
43   Serial.print(AnguloX);
44   Serial.print("\r\n");
45   delay(100);
46 }
47
48 // -----
49

```