

Apéndice C

Código utilizado para controlar los 4 motores y mandar los datos obtenidos por medio del puerto serial.

```
int pulso = 4;
int act1 = 3;
int act2 = 5;
int act3 = 6;
int act4 = 9;

// valores de PWM
int e = 250;
int v= 0;
int vin=130;

// 4 motores a controlar
int a = 0;
int b = 0;
int c = 0;
int d = 0;

//Inclinación acelerómetro
int x1 = 0;
int x2 = 0;
int y1 = 0;
int y2 = 0;

void setup()
{
    pinMode(13, OUTPUT); //utilizaremos el LED para saber que el
    programa funciona
    beginSerial (19200);
    Serial.print ("Finished setup\n");
    pinMode(pulso, OUTPUT);
}

void loop()
{
    digitalWrite(13, LOW); //encendemos el LED (luego lo apagaremos)
    digitalWrite(pulso,HIGH);

    // For de subida de velocidad
    for(v = vin; v <= e; v+=15) // fade in (from min to max)

    {
        a=v;
        b=v;
```

```

c=v;
d=v;

analogWrite(act1, a); // sets the value (range from 0 to 255)
analogWrite(act2, b);
analogWrite(act3, c);
analogWrite(act4, d);
delay(1000); // waits for 1 seconds to see the
dimming effect

char buf2[4];

Serial.print ("M.1: ");
Serial.print (itoa(((a*100)/255), buf2, 10));
Serial.print ("\t M.2: ");
Serial.print (itoa(((b*100)/255), buf2, 10));
Serial.print ("\t M.3: ");
Serial.print (itoa(((c*100)/255), buf2, 10));
Serial.print ("\t M.4: ");
Serial.print (itoa(((d*100)/255), buf2, 10));
Serial.println ("");
///

delay(700);
}
digitalWrite(13, HIGH); //apagar LED
delay(5000);
digitalWrite(13, LOW); //apagar LED

// For de bajada de velocidad
for(v = e; v >=vin; v-=15) // fade out (from max to min)
{
a=v;
b=v;
c=v;
d=v;

analogWrite(act1, a);
analogWrite(act2, b);
analogWrite(act3, c);
analogWrite(act4, d);
delay(1000);

char buf2[4];

Serial.print ("M.1: ");
Serial.print (itoa(((a*100)/255), buf2, 10));
Serial.print ("\t M.2: ");
Serial.print (itoa(((b*100)/255), buf2, 10));
Serial.print ("\t M.3: ");
Serial.print (itoa(((c*100)/255), buf2, 10));
Serial.print ("\t M.4: ");
Serial.print (itoa(((d*100)/255), buf2, 10));
Serial.println ("");

delay(700);
}
}

```