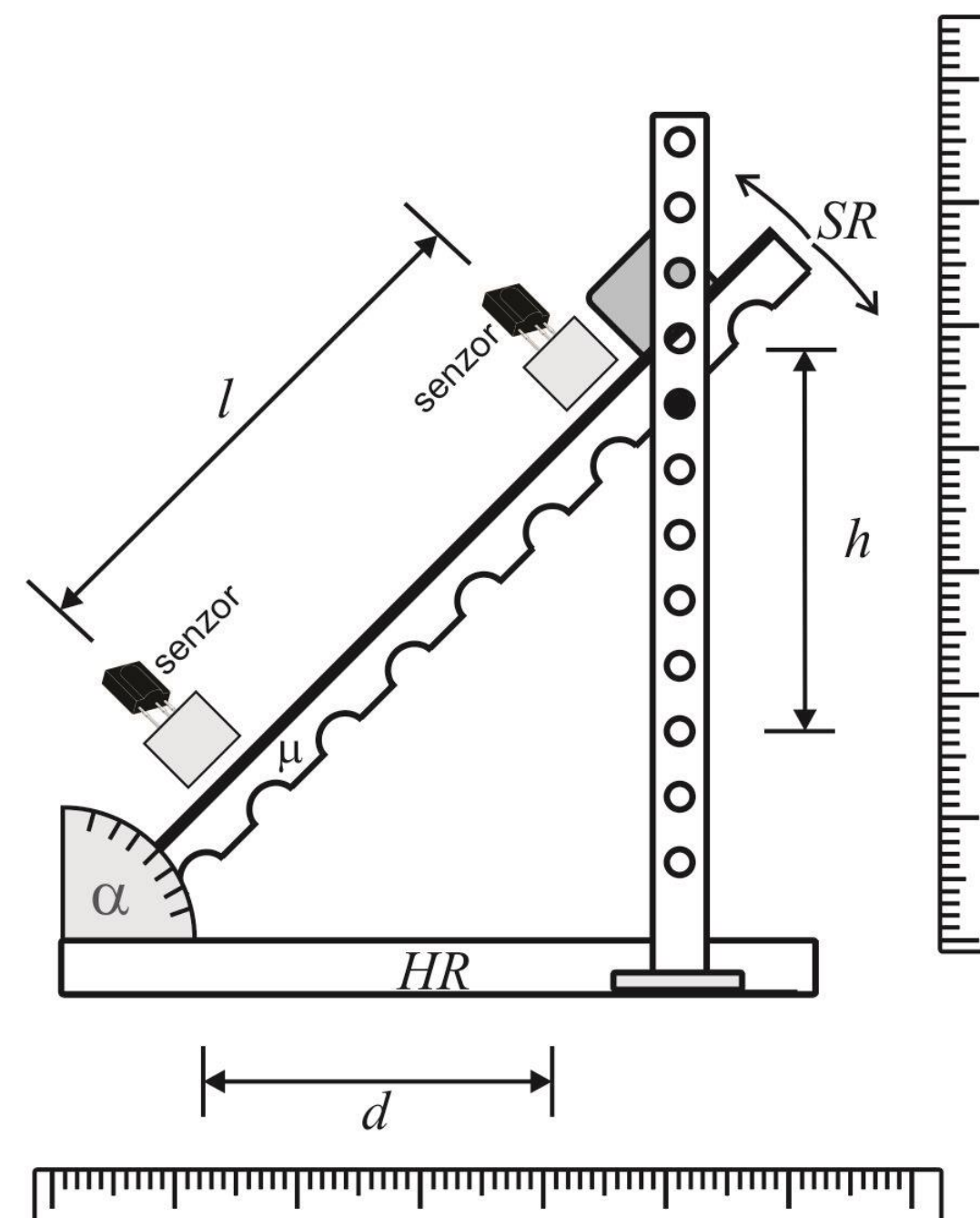
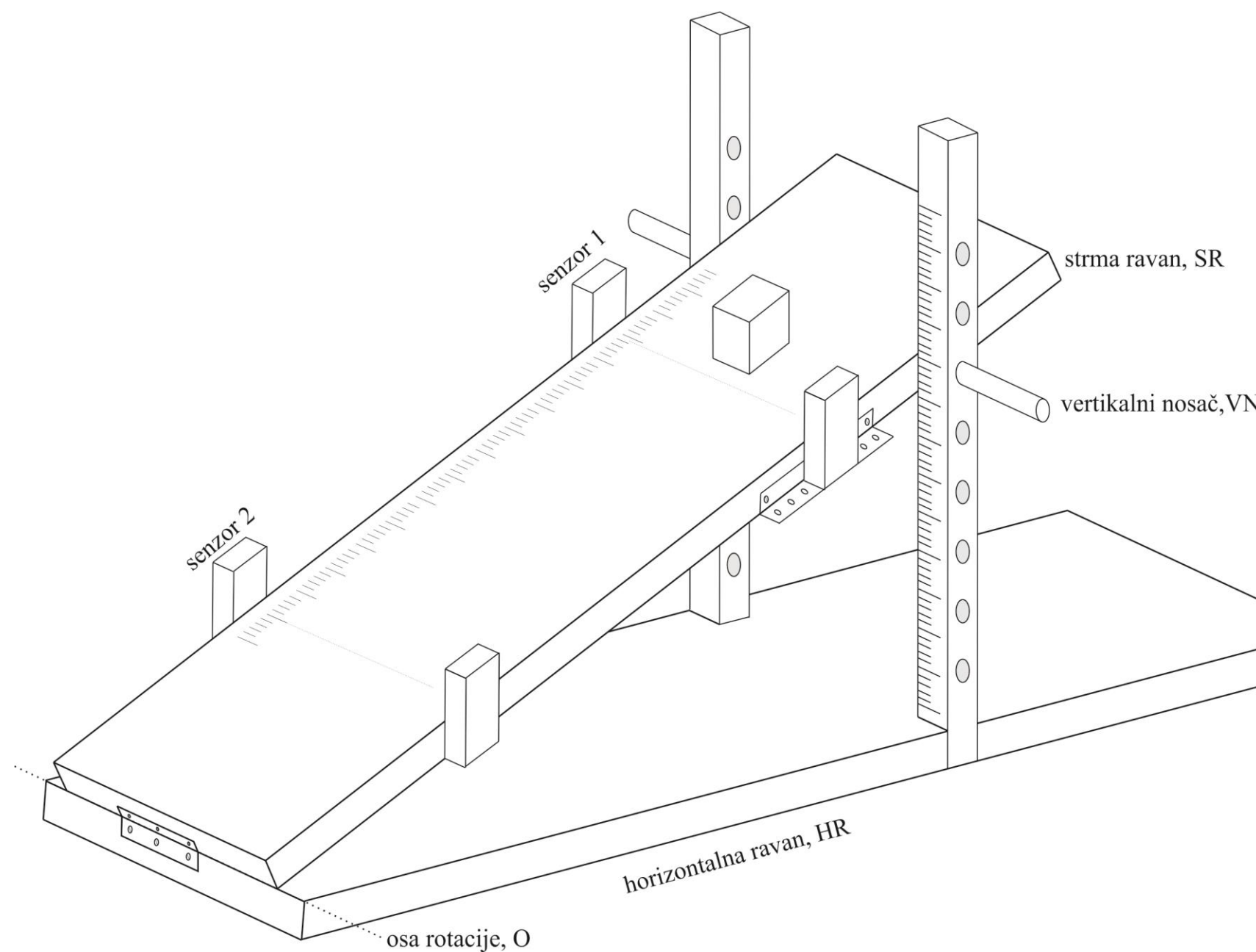


Laboratorijska maketa za proučavanje kretanja tela po strmoj ravni zasnovana na *Raspberry Pi* mini računaru

Milan Danković i Snežana Janković



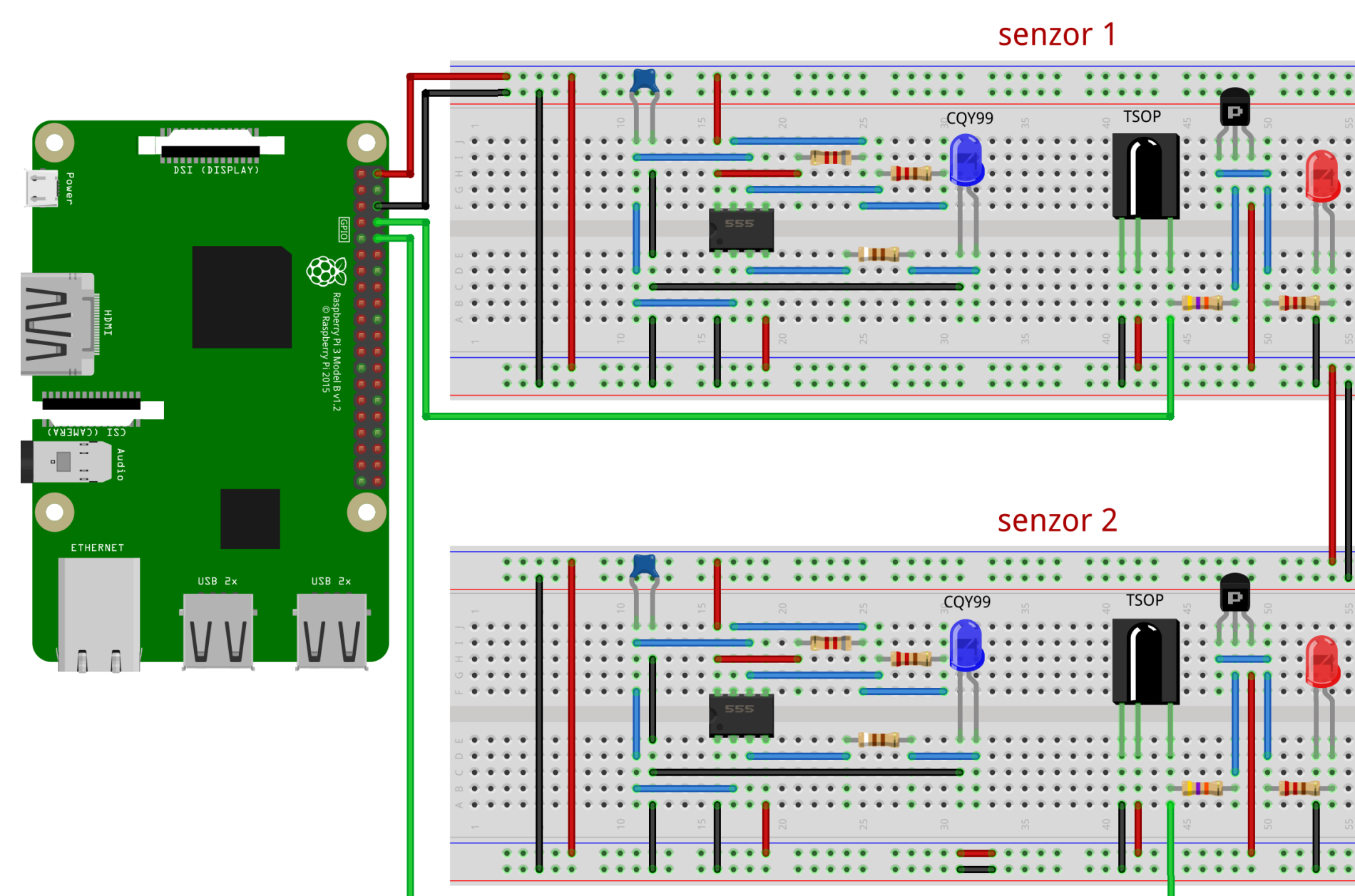
Grafički prikaz laboratorijske makete



Grafički prikaz idejnog rešenja laboratorijske makete



Laboratorijska maketa



Raspberry Pi mikro računar povezan sa senzorima

```
import RPi.GPIO as GPIO
import time, math

G = 9.81 #gravitaciono ubrzanje m/s^2

GPIO.setmode(GPIO.BCM)

senzor1 = 14
senzor2 = 15

GPIO.setup(senzor1, GPIO.IN)
GPIO.setup(senzor2, GPIO.IN)

p = True

d = float(input("Unesi d: "))
h = float(input("Unesi h: "))
l = math.sqrt(d*d + h*h)
print("l = %f m" % l)
print("Pusti telo!")
time_lasted = 0.0

while(p):
    if(GPIO.input(senzor1)):
        start = int(round(time.time() * 1000))
        time.sleep(0.3)
        while(not(GPIO.input(senzor2))):
            time.sleep(0.001)
        end = int(round(time.time() * 1000))
        time_lasted = int(end - start)
        print("t = %.5f s" % (time_lasted/1000))
        p = False
        time.sleep(0.001)

a = (2*l)/((time_lasted/1000) * (time_lasted/1000))
m = (G*(h/l) - a)/(G*(d/l))

print("a = %.5f m/s^2" % a)
print("Koefficient trenja iznosi %.5f" % m)

GPIO.cleanup();
```

Programski kod

