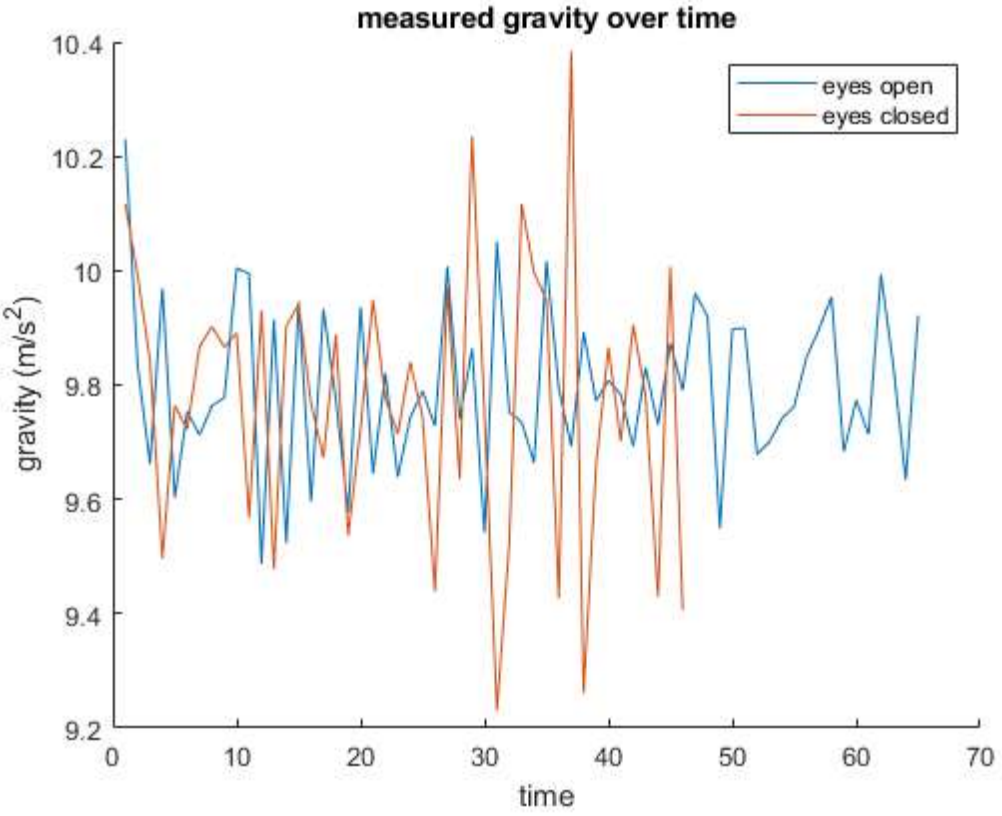
```
clc,clear,close
%eyes open
load('C:\Users\fould\MATLAB Drive\MobileSensorData\eyes_open')
ax2 = Acceleration.X.^2;
ay2 = Acceleration.Y.^2;
az2 = Acceleration.Z.^2;

g = sqrt(ax2 + ay2 + az2);
g1 = g;
t = Acceleration.Timestamp;
std_open = std(g)
mean_open = mean(g)

figure(1)
hold on
plot(g)
xlabel('time')
ylabel('gravity (m/s^2)')
title('measured gravity over time (eyes open)')

%eyes closed
load('C:\Users\fould\MATLAB Drive\MobileSensorData\eyes_closed')
ax2 = Acceleration.X.^2;
ay2 = Acceleration.Y.^2;
az2 = Acceleration.Z.^2;

g = sqrt(ax2 + ay2 + az2);
g2 = g;
t = Acceleration.Timestamp;
std_closed = std(g)
mean_closed = mean(g)

plot(g)
xlabel('time')
ylabel('gravity (m/s^2)')
title('measured gravity over time')
legend('eyes open','eyes closed')
hold off

K = std_open/(std_open + std_closed);
g1 = g1(1:numel(g2));
g3 = g1 + K.*(g2-g1)
std3 = (1-K)*std_open
```

```
std_open =

    0.1450


mean_open =

    9.7961


std_closed =

    0.2434
```

```
mean_closed =

    9.7733


g3 =

   10.1877
    9.8929
    9.7288
    9.7929
    9.6631
    9.7421
    9.7701
    9.8153
    9.8109
    9.9620
    9.8349
    9.6526
    9.7513
    9.6654
    9.9444
    9.6594
    9.8357
    9.8169
    9.5621
    9.8578
    9.7581
    9.8038
    9.6672
    9.7787
    9.7726
    9.6202
    9.9939
    9.7016
   10.0024
    9.6195
    9.7444
    9.6673
    9.8775
    9.7881
    9.9911
    9.6569
    9.9508
    9.6566
    9.7299
    9.8292
    9.7524
    9.7719
    9.8121
    9.6179
    9.9230
    9.6471


std3 =

    0.0909
```



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