```matlab
% Promediado de PPG

clearvars
close all
clc

load('multi2.mat');

salidaoscu = PCG;
salida2 = PPG;

Fc = 30;
Fs = 200;
tita = 2*pi*(Fc/Fs);
r = 0.5;
b1 = 2*r*cos(tita);
b2 = r*r;
a1 = -2;
a2 = 1;
zeros = [1 a1 a2]; % z2 z 1
polos = [1 -b1 b2]; % z2 z 1

salidaoscu = filtfilt(zeros,polos,salidaoscu);

zeros = [1/4 1/2 1/4]; % z2 z 1
polos = [1 0 0]; % z2 z 1

salidaoscu = filtfilt(zeros,polos,salidaoscu);
subplot(2,1,1);plot(salida2);
subplot(2,1,2);plot(salidaoscu);

i = 1;
marcas = ones(1,10);
k = 0;
while(i < length(salidaoscu))
    if (salidaoscu(i) > 0.71)
        k = k + 1;
        marcas(k) = i;
        i = i + 100;
    end
    i = i + 1;
end

hold on;stem(marcas,ones(1,length(marcas)),'r');hold off;
RR = floor(mean(diff(marcas)));

% Promediado
clear zeros;
L = RR-10;
vector = zeros(1,L);
for i = 1 : length(marcas) - 1
    vector = vector + salida2(marcas(i) : marcas(i) + L - 1);
end
vector = vector / (length(marcas) - 1);

figure;
plot(vector);
zeros = [1/16 1/4 6/16 1/4 1/16]; % z2 z 1
polos = [1 0 0 0 0]; % z2 z 1
vector = filtfilt(zeros,polos,vector);
hold on;plot(vector,'r');hold off;
```