Simulate track with simple model

```
clear;
```

Read track information

```
track = importdata('Hill.csv', ';', 0);
%track = importdata('./tracks/Ex3.csv', ';', 0);
```

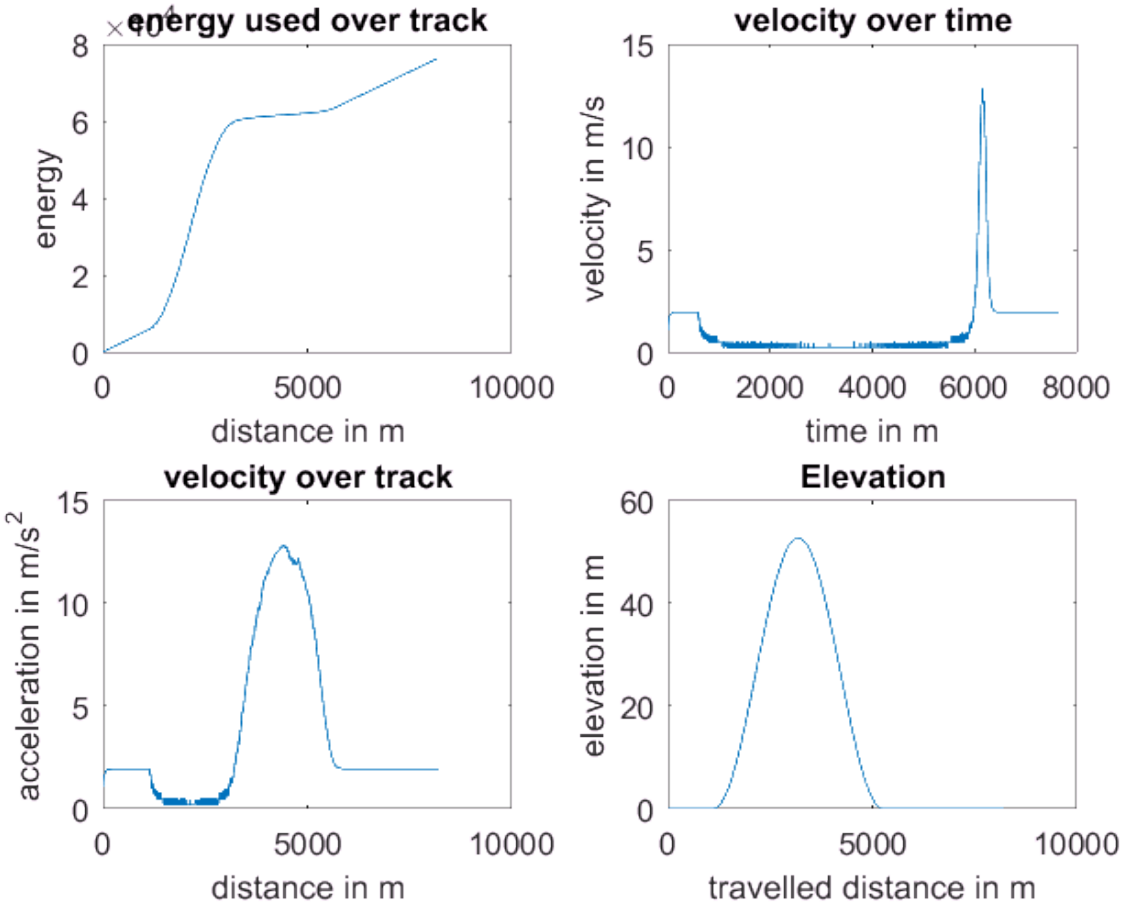
Simulate

```
command = 0.05;
result = simulateTrackTime(track, command);
```

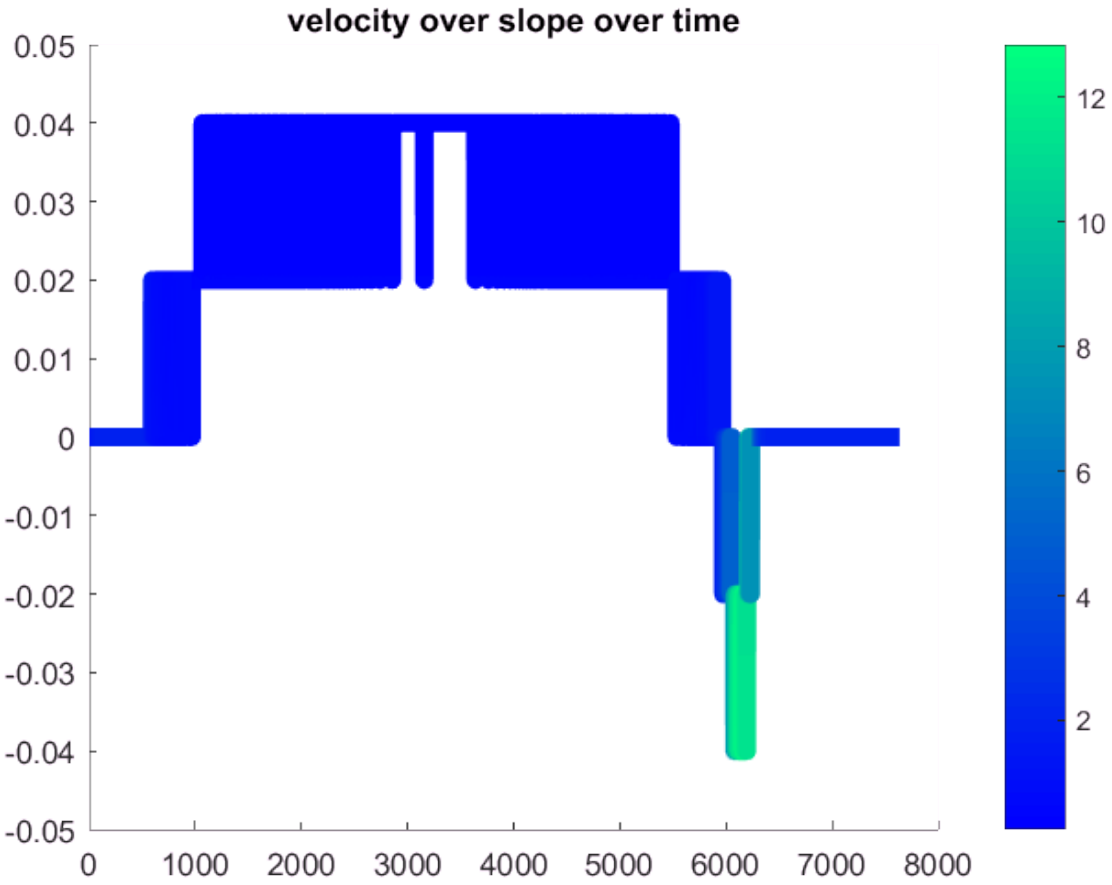
```
result =
    travelledDistance: [8193x1 double]
            elevation: [8193x1 double]
          slopeLookup: [8193x1 containers.Map]
```

Result

```
figure(1);clf;
hold on;
subplot(2,2,1);
plot(result.distance, result.energy);
title('energy used over track');
xlabel('distance in m');
ylabel('energy');

subplot(2,2,2);
plot(result.time, result.velocity);
title('velocity over time');
xlabel('time in m');
ylabel('velocity in m/s');

subplot(2,2,3);
plot(result.distance, result.velocity);
title('velocity over track');
xlabel('distance in m');
ylabel('acceleration in m/s^2');

subplot(2,2,4);
plot(result.travelledDistance, result.elevation);
title('Elevation');
xlabel('travelled distance in m');
ylabel('elevation in m');
```




```
figure(2);clf;hold on;
colormap(winter);

x = result.time; % displacement
z = zeros(size(x)); % zero, because not used
y = result.slope;
col = result.velocity;%1:length(x);  % This is the color, vary with x in this case., for insta
surface([x;x],[y;y],[z;z],[col;col],...
        'facecol','no',...
        'edgecol','interp',...
        'linew',6);
title('velocity over slope over time');
colorbar
```


velocity over slope over time
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
0
1000
2000
3000
4000
5000
6000
7000
8000
12
10
8
6
4
2