

```
t = Cartposition(:,1);
```

Unrecognized function or variable 'Cartposition'.

```
dt = t(2)-t(1);  
y = Cartposition(:,2);  
ydot = diff(y)/dt; ydot(end+1) = ydot(end);
```

```
figure(1)  
plot(t,y,'b')  
title("Cart Position and Velocity vs Time")  
xlabel("Time, s")  
ylabel("Cart Position, m; Cart Velocity, m/s")  
grid on  
hold on  
plot(t,ydot,'r')  
legend("Cart Position","Cart Velocity")  
hold off
```

```
m = 1.0731; gamma = 1.7235; Bemf = 7.7236;  
% ydot_avg = mean(ydot(3593:3647))  
ydot_avg = 1.06854386538119;  
y_inf = y(end);  
Beq = (y_inf/(ydot_avg*m))^-1  
c = Bemf + Beq
```

```
t2 = t(1:2875);  
figure(2)  
plot(t2,y(3156:end))  
y_beq = ydot_avg * m / Beq * (1-exp(-Beq*(t)/m));  
hold on  
plot(t,y_beq)  
grid on  
title("Cart Position vs Time")  
xlabel("Time, s")  
ylabel("Cart Position, m")  
legend("Experimental Data","Calculated Position")  
xlim([0 2])
```