

17 INOUWA OYELEYE

COMPUTER ENG ENG 387

18/ENGG02/106

```
function [dmdt]
```

```
= chokes(t,m)
```

```
dmdt(1) = -((15/500)*m(1)) + ((5/1000)*m(2)) + 1;
```

```
dmdt(2) = ((15/500)*m(1)) + ((18/1000)*m(2)) + ((3/400)*m(3));
```

```
dmdt(3) = ((3/1000)*m(2)) - ((13/400)*m(3));
```

```
dmdt = dmdt';
```

```
end
```

Command Window

```
clear
```

```
clc
```

```
close all
```

```
width = [0:1:1200];
```

```
initial = [0 0 0]';
```

```
[t,Q] = ode45(@chokes,width,initial);
```

```
figure(1)
```

```
subplot(3,1,1)
```

```
plot(t,Q(:,1),'g-o')
```

```
xlabel('Time(min)')
```

```
ylabel('Volume(litres)')
```

```
legend('Tank 1, Location, South')
```

```
grid on
```

```
axis tight
```

```
title('Figure 1 : Dynamic Responses of the tanks')
```

```
subplot(3,1,2)
```

```
plot(t,Q(:,2),'b*-')
```

```
xlabel('Time(min)')
```

```
ylabel('Volume(litres)')
```

```
legend('Tank 2, Location, South')
```

```
grid on
```

```
axis tight
```

Subplot (3,1,3)

Plot (t, Q(:,3), 'r+- -')

xlabel ('Time(min)')

ylabel ('Volume(litres)')

legend ('Tank 3', 'Location', 'South')

grid on

axis tight