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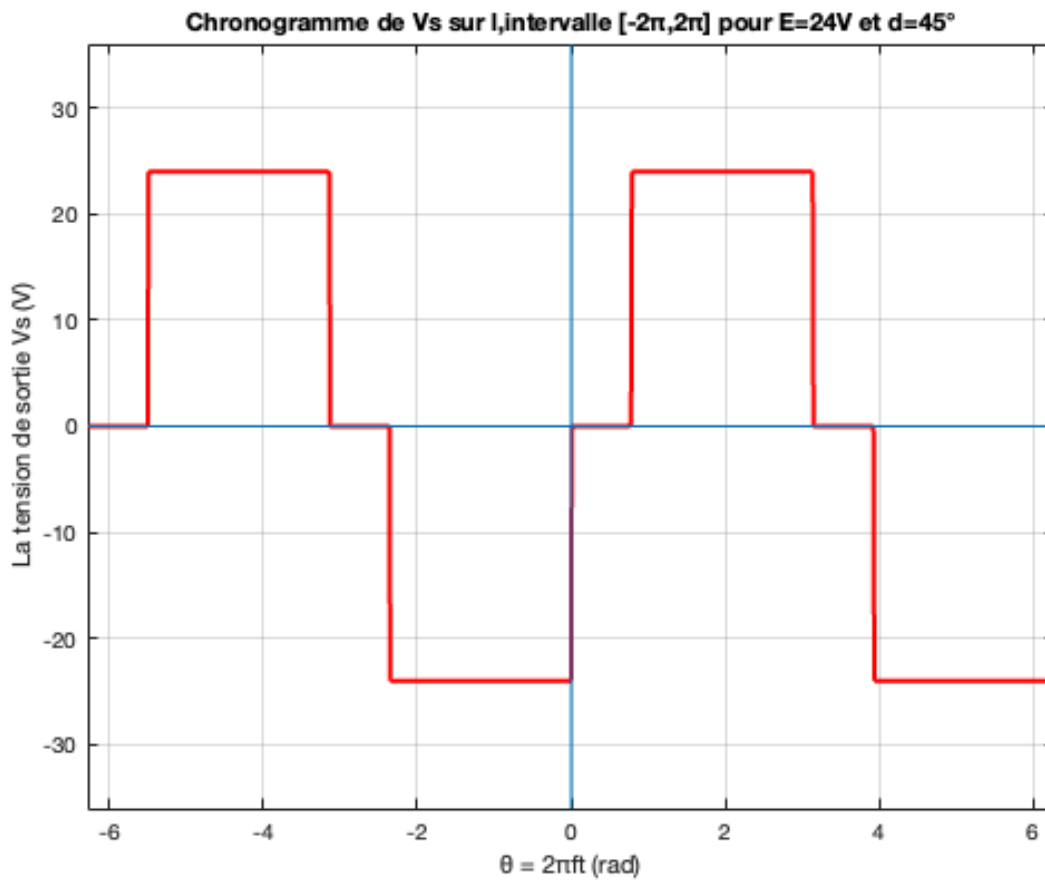
```
clear all clf;
```

Chronogramme de Vs

```
d = pi/4;
E = 24;
x=-2*pi:0.01:2*pi;
y=0*(x>=-2*pi&x<-2*pi+d)+E*(x>=-2*pi+d&x<-pi)+0*(x>=-pi&x<-pi+d)...
-E*(x>=-pi+d&x<0)+0*(x>=0&x<d)+E*(x>=d&x<pi)...
+0*(x>=pi&x<pi+d)-E*(x>=pi+d&x<2*pi);
figure(1)
plot(x,y,'r','linewidth',2),grid on
xlim([-2*pi 2*pi])
ylim([-E*1.5 E*1.5])

xL = xlim;
yL = ylim;
line([0 0], yL); %x-axis
line(xL, [0 0]); %y-axis

title(['Chronogramme de Vs sur 1,intervalle ' ...
      '[-2#,2#] pour E=24V et d=45°'],'')
xlabel('# = 2#ft (rad)')
ylabel('La tension de sortie Vs (V)')
```



Analyse spectrale: V

```
d1 = 0; d2 = pi/6; d3 = pi/3; d4 = pi/2;
for n = 1:10
    if mod(n,2)==0 Vn1(n) = 0;
    else Vn1(n) = (2*sqrt(2)*E./(n*pi)) .* cos(n*d1/2);
    end
end
for n = 1:10
    if mod(n,2)==0 Vn2(n) = 0;
    else Vn2(n) = (2*sqrt(2)*E./(n*pi)) .* cos(n*d2/2);
    end
end
for n = 1:10
    if mod(n,2)==0 Vn3(n) = 0;
    else Vn3(n) = (2*sqrt(2)*E./(n*pi)) .* cos(n*d3/2);
    end
end
for n = 1:10
    if mod(n,2)==0 Vn4(n) = 0;
    else Vn4(n) = (2*sqrt(2)*E./(n*pi)) .* cos(n*d4/2);
    end
end
```

end

```
nt = [100 200 300 400 500 600 700 800 900 1000];
figure(2)
subplot(2,2,1);
b1 = bar(Vn1) % Vn quand d = 0
set(gca,'xticklabel',nt) % changement d'echelle
set(b1,'FaceColor',[0 0.2 1]),grid on % blue
title('Spectre de Vs: d = 0°');
xlabel('Frequence [Hz]');
ylabel('Tension [V]');
subplot(2,2,2);
b2 = bar(Vn2) % Vn quand d = pi/6
set(gca,'xticklabel',nt) % changement d'echelle
set(b2,'FaceColor',[1 0.2 0.2]),grid on % red
title('Spectre de Vs: d = 30°');
xlabel('Frequence [Hz]');
ylabel('Tension [V]');
subplot(2,2,3);
b3 = bar(Vn3) % Vn quand d = pi/3
set(gca,'xticklabel',nt) % changement d'echelle
set(b3,'FaceColor',[0 0.6 0.3]),grid on % green
title('Spectre de Vs: d = 60°');
xlabel('Frequence [Hz]');
ylabel('Tension [V]');
subplot(2,2,4);
b4 = bar(Vn4) % Vn quand d = pi/2
set(gca,'xticklabel',nt) % changement d'echelle
set(b4,'FaceColor',[1 0.5 0]),grid on % orange
title('Spectre de Vs: d = 90°');
xlabel('Frequence [Hz]');
ylabel('Tension [V]');
```

b1 =

Bar with properties:

```
BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
XData: [1 2 3 4 5 6 7 8 9 10]
YData: [21.6076 0 7.2025 0 4.3215 0 3.0868 0 2.4008 0]
```

Use GET to show all properties

b2 =

Bar with properties:

```
BarLayout: 'grouped'
```

```
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
  XData: [1 2 3 4 5 6 7 8 9 10]
  YData: [20.8713 0 5.0930 0 1.1185 0 -0.7989 0 -1.6977 0]
```

Use GET to show all properties

b3 =

Bar with properties:

```
BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
  XData: [1 2 3 4 5 6 7 8 9 10]
  YData: [18.7127 0 4.4103e-16 0 -3.7425 0 -2.6732 0 -4.4103e-16 0]
```

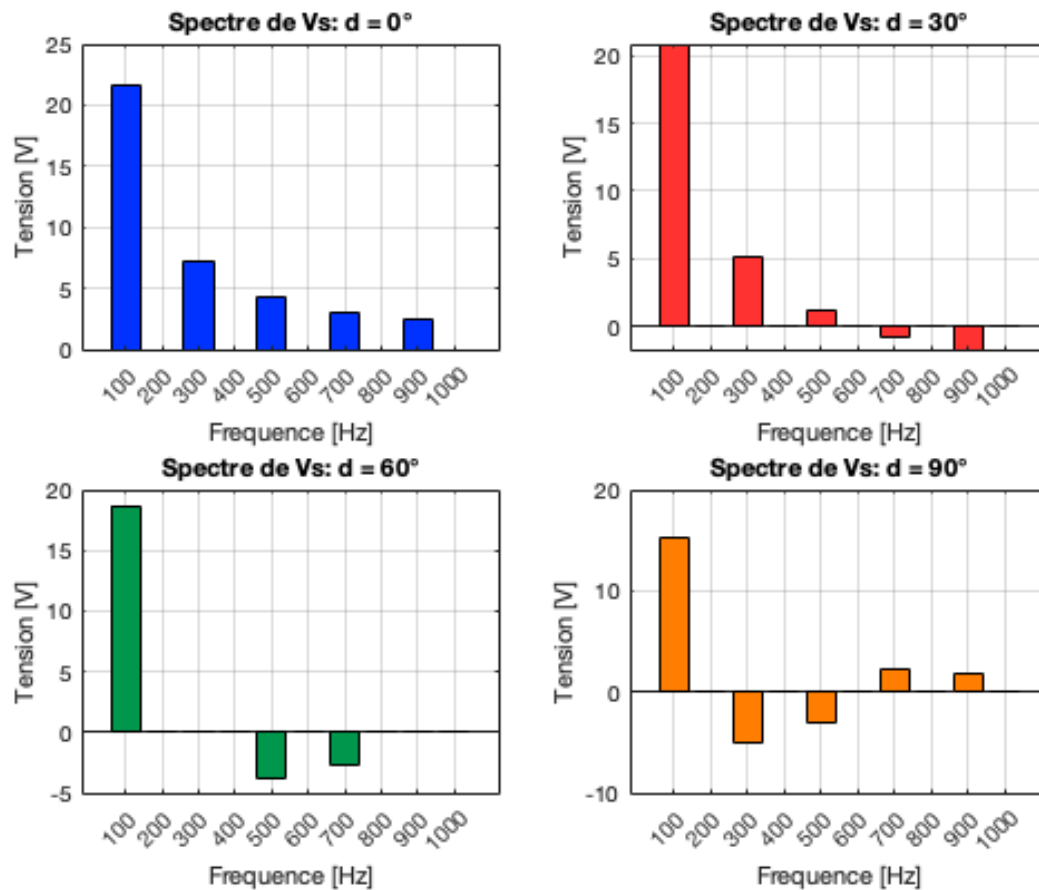
Use GET to show all properties

b4 =

Bar with properties:

```
BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
  XData: [1 2 3 4 5 6 7 8 9 10]
  YData: [15.2789 0 -5.0930 0 -3.0558 0 2.1827 0 1.6977 0]
```

Use GET to show all properties



Analyse Spectrale: I

```

R = 12;
L = 0.01;
f = 100;
for n = 1:10
    Zn(n) = sqrt(R^2 + (n*L*2*pi*f).^2);
end
In1 = Vn1 ./ Zn;
In2 = Vn2 ./ Zn;
In3 = Vn3 ./ Zn;
In4 = Vn4 ./ Zn;

figure(3)
subplot(2,2,1);
b1 = bar(In1) % Vn quand d = 0
set(gca,'xticklabel',nt) % changement d'echelle
set(b1,'FaceColor',[0 0.2 1]),grid on % blue
title('Spectre de Is: d = 0°');
xlabel('Frequence [Hz]');
ylabel('Courant [A]');
subplot(2,2,2);

```

```

b2 = bar(In2) % Vn quand d = pi/6
set(gca,'xticklabel',nt) % changement d'echelle
set(b2,'FaceColor',[1 0.2 0.2]),grid on % red
title('Spectre de Is: d = 30°');
xlabel('Frequence [Hz]');
ylabel('Courant [A]')
subplot(2,2,3);
b3 = bar(In3) % Vn quand d = pi/3
set(gca,'xticklabel',nt) % changement d'echelle
set(b3,'FaceColor',[0 0.6 0.3]),grid on % green
title('Spectre de Is: d = 60°');
xlabel('Frequence [Hz]');
ylabel('Courant [A]')
subplot(2,2,4);
b4 = bar(In4) % Vn quand d = pi/2
set(gca,'xticklabel',nt) % changement d'echelle
set(b4,'FaceColor',[1 0.5 0]),grid on % orange
title('Spectre de Is: d = 90°');
xlabel('Frequence [Hz]');
ylabel('Courant [A]')

```

b1 =

Bar with properties:

```

BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
XData: [1 2 3 4 5 6 7 8 9 10]
YData: [1.5952 0 0.3223 0 0.1285 0 0.0677 0 0.0415 0]

```

Use GET to show all properties

b2 =

Bar with properties:

```

BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
XData: [1 2 3 4 5 6 7 8 9 10]
YData: [1.5408 0 0.2279 0 0.0333 0 -0.0175 0 -0.0294 0]

```

Use GET to show all properties

b3 =

Bar with properties:

```
BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
XData: [1 2 3 4 5 6 7 8 9 10]
YData: [1.3815 0 1.9737e-17 0 -0.1113 0 -0.0586 0 -7.6292e-18 0]
```

Use GET to show all properties

b4 =

Bar with properties:

```
BarLayout: 'grouped'
BarWidth: 0.8000
FaceColor: [0 0.4470 0.7410]
EdgeColor: [0 0 0]
BaseValue: 0
XData: [1 2 3 4 5 6 7 8 9 10]
YData: [1.1280 0 -0.2279 0 -0.0909 0 0.0479 0 0.0294 0]
```

Use GET to show all properties

