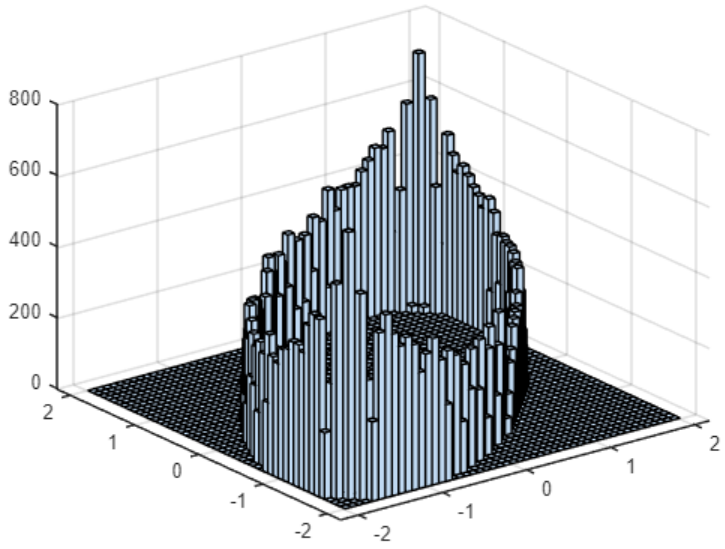
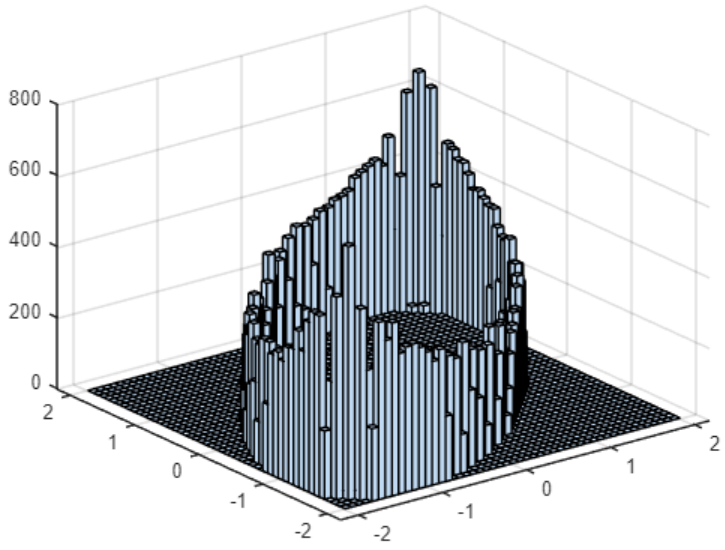
```
%%Q4(c)(i-ii) t1=0.8 t2=1.23 delta=0
close all;
clear all;

w= 2*pi/3;
lower_limit = 0;
upper_limit = 2*pi;
t_1 = 0.8;
t_2 = 1.23;

xout=zeros(50e3,1);
realztn_theta = lower_limit + (upper_limit-lower_limit)*rand([1 100e3]);

for i = 1: 50e3
    xout(i,1)= 2*cos(w* t_1 + realztn_theta(i));
end

for i = 1: 50e3
    xout(i,2)= 2*cos(w* t_2 + realztn_theta(i));
end

hist3(xout ,'Nbins',[50 50])
```



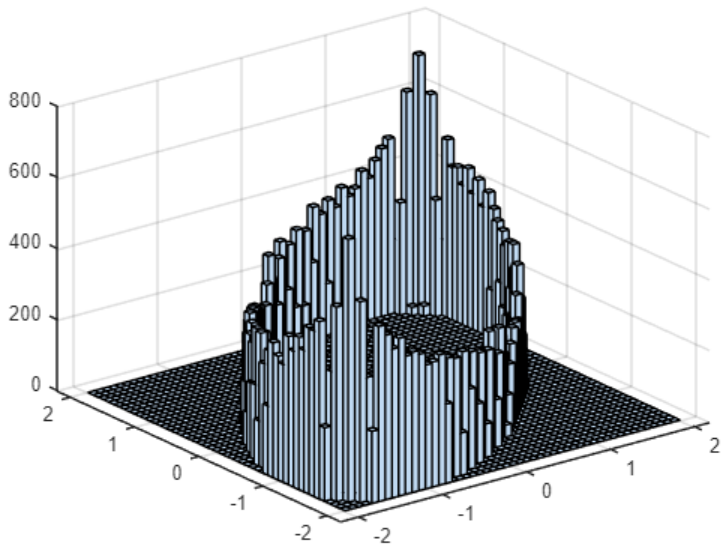

```
%%Q4(c)(i-ii) t1=0.8 t2=1.23 delta=0.95
close all;
clear all;
```

```
w= 2*pi/3;
lower_limit = 0;
upper_limit = 2*pi;
delta=0.95;
t_1 = 0.8 + delta;
t_2 = 1.23+ delta;

xout=zeros(50e3,1);
realztn_theta = lower_limit + (upper_limit-lower_limit)*rand([1 100e3]);

for i = 1: 50e3
    xout(i,1)= 2*cos(w* t_1 + realztn_theta(i));
end

for i = 1: 50e3
    xout(i,2)= 2*cos(w* t_2 + realztn_theta(i));
end

hist3(xout ,'Nbins',[50 50])
```



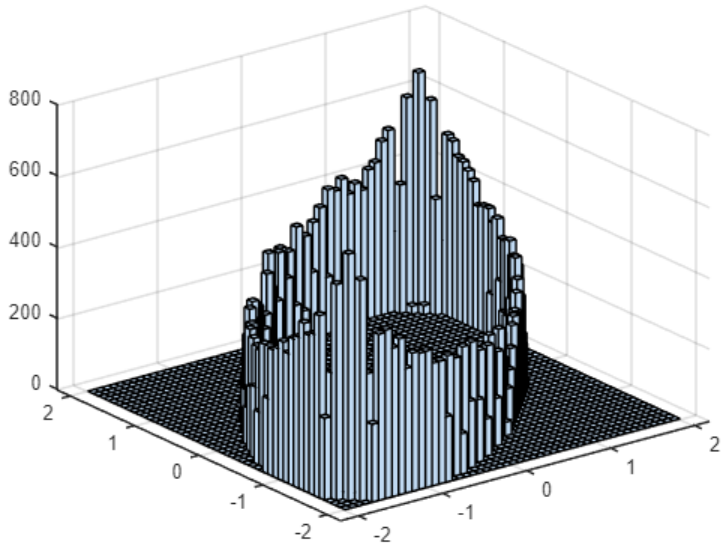

```
%%Q4(c)(i-ii) t1=0.8 t2=1.23 delta=1.97
close all;
clear all;

w= 2*pi/3;
lower_limit = 0;
upper_limit = 2*pi;
```

```
delta=1.97;
t_1 = 0.8 + delta;
t_2 = 1.23+ delta;

xout=zeros(50e3,1);
realztn_theta = lower_limit + (upper_limit-lower_limit)*rand([1 100e3]);

for i = 1: 50e3
    xout(i,1)= 2*cos(w* t_1 + realztn_theta(i));
end

for i = 1: 50e3
    xout(i,2)= 2*cos(w* t_2 + realztn_theta(i));
end

hist3(xout ,'Nbins',[50 50])
```




```
%%Q4(c)(i-ii) t1=0.8 t2=1.23 delta=10.84
close all;
clear all;

w= 2*pi/3;
lower_limit = 0;
upper_limit = 2*pi;
delta=10.84;
t_1 = 0.8 + delta;
t_2 = 1.23+ delta;
```

```
xout=zeros(50e3,1);
realztn_theta = lower_limit + (upper_limit-lower_limit)*rand([1 100e3]);

for i = 1: 50e3
    xout(i,1)= 2*cos(w* t_1 + realztn_theta(i));
end

for i = 1: 50e3
    xout(i,2)= 2*cos(w* t_2 + realztn_theta(i));
end

hist3(xout ,'Nbins',[50 50])
```



Yes, I also observed the second-order stationarity from the above four plots since they look like same.