# Spectrogram of Complex Signal

Generate 512 samples of a chirp with sinusoidally varying frequency content.

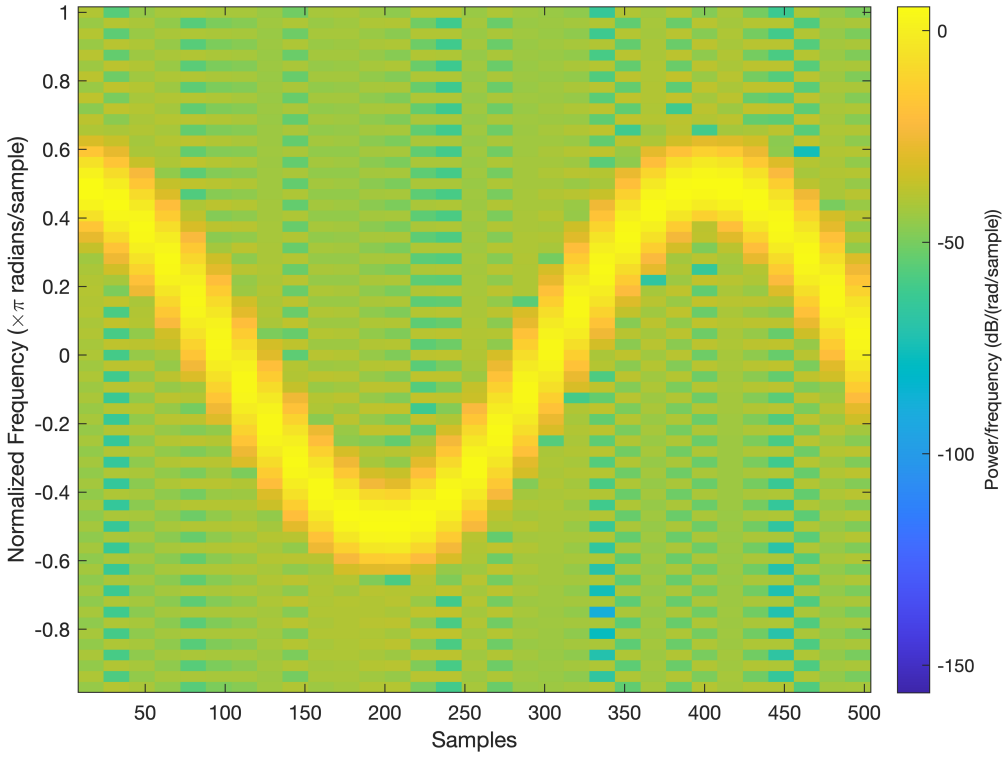
```
N = 512;
n = 0:N-1;

x = exp(1j*pi*sin(8*n/N)*32);
```

Compute the centered two-sided short-time Fourier transform of the chirp. Divide the signal into 32-sample segments with 16-sample overlap. Specify 64 DFT points. Plot the spectrogram.

```
[scalar,fs,ts] = spectrogram(x,32,16,64,'centered');

spectrogram(x,32,16,64,'centered','yaxis')
```




Obtain the same result by computing the spectrogram on 64 equispaced frequencies over the interval $(-\pi, \pi]$. The `'centered'` option is not necessary.

```
fintv = -pi+pi/32:pi/32:pi;

[vector,fv,tv] = spectrogram(x,32,16,fintv);

spectrogram(x,32,16,fintv,'yaxis')
```