

## Wednesday – Part 1

*Pavel Štekl*

### *FFT demo*

```
% FFT for Spectral Analysis
% using FFT function for spectral analysis original harmonic frequencies
% from noisy signal.

%time base for analysis
t = 0:.001:.25;
%basic signal level
x = sin(2*pi*50*t) + sin(2*pi*100*t);
% addition of noisy level
y = x + 2*randn(size(t));
subplot(2,2,1):plot(y(1:50))
title('Noisy time domain signal')
%-----first part
% calling analytical funtion (FFT).
Y = fft(y,256);
%-----
%plotting energetic spectrum
Pyy = Y.*conj(Y)/256;
f = 1000/256*(0:127);
subplot(2,2,2):plot(f,Pyy(1:128))
title('Power spectral density')
xlabel('Frequency (Hz)')
%-----second part
% Zoom in and plot only up to 200 Hz. Notice the peaks at 50 Hz and 120
Hz.
subplot(2,2,3):plot(f(1:50),Pyy(1:50))
title('Power spectral density')
xlabel('Frequency (Hz)')
```

### *Quadratic*

```
function kvadratika(x,y,z)
x=input('koeficient a=');
y=input('koeficient b=');
z=input('koeficient c=');
C=[x,y,z];
Koreny=roots(C)
```