

Removing Electrical Line Noise

- ac frequency is typically 60hz (some countries 50hz, as in this dataset)

Load the dataset

```
load ../datasets/lineNoiseData.mat;  
len = length(data);  
t = (0:len-1)/srate;
```

Compute the power spectrum

```
power_spectrum = abs(fft(data)/len).^2;  
hz = linspace(0,srate,len);
```

Plot

```
f1 = figure(1); clf;  
  
subplot(211);  
plot(t, data);  
xlabel("time (s)");  
ylabel("amplitude");  
title("signal in the time domain");  
  
subplot(212);  
plot(hz, power_spectrum);  
xlabel("frequency (hz)");  
ylabel("power");  
title("signal in the frequency domain");
```

