

II. Random sampling and FFTs

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In [53]: %pylab
```

Load data from file

```
In [5]: data = # Load data
x = ; y = ; dy = ; # Assign variables from data columns
```

Take FFT of data values

```
In [19]: # Import the command you need
fy = # Take FFT
semilogy(x,fy * conj(fy),'k.') # Plot power spectrum in log scale
```

Take a sample, treating the data as independent points, and FFT

```
In [27]: samp = dy * randn(size(y)) + y
# Convert sample to power spectrum
# Plot result, again with log y-axis
```

Take many such samples and build a Fourier space error distribution

```
In [44]: nr = 100 # Number of resamples
samples = zeros((nr,size(y)))
# Make samples (e.g., a for loop, tiling the dy array, ...)
```

```
In [45]: msamp = # Compute the sample mean
ssamp = # Compute the sample standard deviation
```

Plot output

```
In [51]: semilogy(x,fy * conj(fy))
errorbar(x,msamp,ssamp)
```