Lab 8

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Part 1

```matlab
clear all; close all; clc

%Higgs Data
h5disp("higgs_100000_pt_250_500.h5");
```

```
HDF5 higgs_100000_pt_250_500.h5
Group '/'
    Dataset 'higgs_100000_pt_250_500'
        Size:  14x100000
        MaxSize:  14x100000
        Datatype:   H5T_IEEE_F64LE (double)
        ChunkSize:  []
        Filters:  none
        FillValue:  0.000000
```

```matlab
Higgs = h5read("higgs_100000_pt_250_500.h5",'/higgs_100000_pt_250_500');

h5disp("qcd_100000_pt_250_500.h5");
```

```
HDF5 qcd_100000_pt_250_500.h5
Group '/'
    Dataset 'qcd_100000_pt_250_500'
        Size:  14x100000
        MaxSize:  14x100000
        Datatype:   H5T_IEEE_F64LE (double)
        ChunkSize:  []
        Filters:  none
        FillValue:  0.000000
```
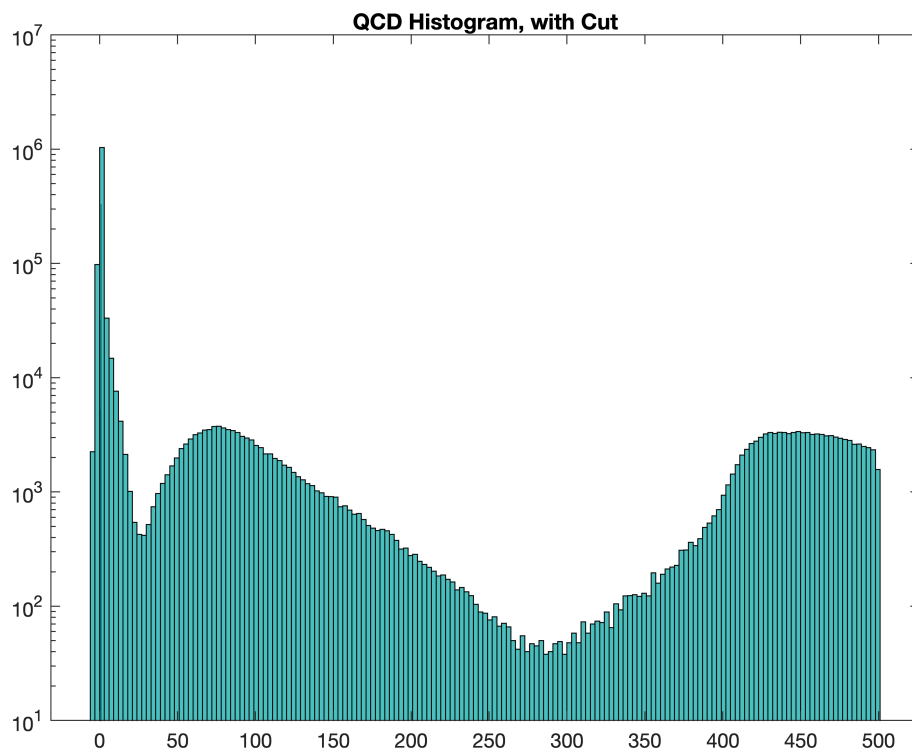
```matlab
qcd = h5read("qcd_100000_pt_250_500.h5",'/qcd_100000_pt_250_500');
```

Plot Observed Data for High Luminosity

```matlab
UpperQ=cdf('Poisson',1,qcd);

histogram(UpperQ,'FaceColor','blue')
title('QCD Histogram, with Cut')
set(gca,'Yscale','log')
hold on
histogram(qcd,'FaceColor','cyan')
hold off
```

QCD Histogram, with Cut


```
UpperH=cdf('Poisson',1,Higgs);
histogram(UpperH,'FaceColor','blue')
set(gca,'Yscale','log')
title('Higgs Histogram, with Cut')
hold on
histogram(Higgs,'FaceColor','cyan')
hold off
```

Higgs Histogram, with Cut