random_sampling

April 15, 2017

In [6]:
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%matplotlib inline
import numpy as np
import matplotlib.pyplot as plt
import matplotlib
matplotlib.rc('xtick', labelsize=20)
matplotlib.rc('ytick', labelsize=20)

#generate random number between 1 and 3 following an uniform density
x = np.random.uniform(1.,3.,size=1000)

#analyze the random samples with a histogram
xgrid = np.arange(1,3,0.02)
xcenter = (xgrid[1:]+xgrid[0:len(xgrid)-1])/2.
hx,xedge = np.histogram(x,xgrid)

#draw the histogram
fig = plt.figure(figsize=[10,5])
ax = fig.add_subplot(111)
ax.plot(xcenter,hx,'ko-')
ax.plot([1.,3.],[10.,10.],'k--')
ax.plot([1.,3.],[10.-np.sqrt(10.),10.-np.sqrt(10.)],'k:')
ax.plot([1.,3.],[10.+np.sqrt(10.),10.+np.sqrt(10.)],'k:')
fig.show()
fig.savefig('unifrand_hist.png',bbox_inches='tight')

print np.mean(x), np.var(x)
```

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1.9710449952 0.324008493817
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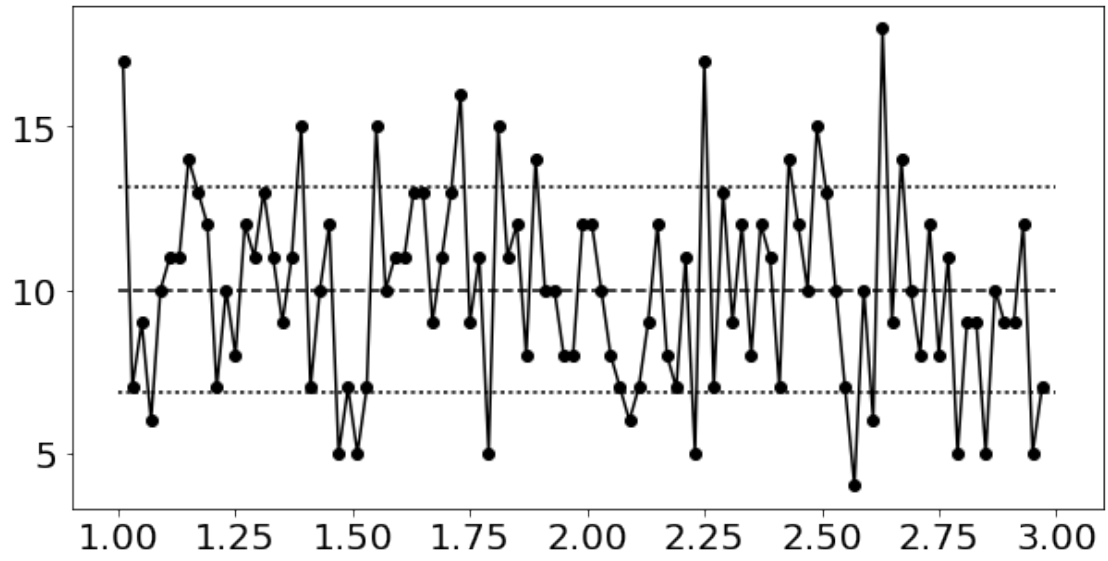

In [ ]: