In [1]:
```
import matplotlib.pyplot as plt

var('x')
plot(x * (1 - bessel_I(1, x) / bessel_I(0, x)), 0, 8, color = 'red',
    legend_label = 'analytic').matplotlib(figure = plt.gcf())

list_x = []
list_y = []
list_dy = []

f = open("sgauge.out", "r")
for line in f:
    if line[0] == " ":
        data = line.split()
        x = float(data[0])
        y = float(data[1])
        dy = float(data[2])
        print(x, y, dy)
        list_x.append(x)
        list_y.append(y)
        list_dy.append(dy)
f.close()

plt.title(r"pure U(1) HMC, L = 16")
plt.xlabel(r"$\beta$")
plt.ylabel(r"$<S_g>$")
plt.axis([0, 8, 0, 0.7])

plt.errorbar(list_x, list_y, yerr = list_dy, linestyle = 'None', marker = '.')
plt.savefig("sgauge.svg")
```