appendices lstlisting[style=pythonstyle, caption=Python Code, label=pythoncode]
import numpy as np import matplotlib.pyplot as plt
Set the number of steps and the step size num$_steps = 5000step_size = 0.1$
Generate the random steps steps = np.random.normal(0, 1, (2, num$_steps)) * step_size * *0.5$
Calculate the Brownian motion brownian$_motion = np.cumsum(steps, axis = 1)$
Plot the Brownian motion plt.plot(brownian$_motion[0], brownian_motion[1])plt.title('BrownianMotion')plt.xlabel('X$