Problem 13.1 There are two more PSD approximation programs on the website, disc13 and disc13b. The first one uses the method for approximating the PSD by taking the FFT of realizations and averaging them. (Last discussion we did that and compared with taking the autocorrelation, taking the FFT of that, and averaging.) The second one uses yet another method, called “Bartlett’s method”, where we instead take only one realization, (but with length much longer) and use segments of it to approximate the PSD.

Problem 13.2 Discuss how to produce noise with a PSD $S_x(f) = \frac{1}{f-f_s}$, (where $f_s$ is the frequency at which the samples are to be produced.)