TFY4235/FY8904 Computational Physics, Spring 2013

Problem Set 5

Problem 1.

Generate a 100×100 *symmetric* (why symmetric?) matrix whose elements are randomly distributed on the interval $[-1, 1]$. Find the largest and the smallest eigenvalues of the matrix. Use the Lambert-Weaire algorithm to map out the remaining 98 eigenvalues to within — say — 1% accuracy. Average the results over many samples. Find the distribution of the largest eigenvalues and show them in a histogram.