

Computational Quantum Physics Exercise 7

Problem 7.1 Exact diagonalization

Continue working on your exact diagonalization code. In particular, try to implement sparse diagonalization and the $U(1)$ symmetry. Techniques for sparse diagonalization will be discussed in the exercise class.

You may also want to take a look at <http://www.cs.utk.edu/~dongarra/etemplates/index.html>. Some particularly simple methods are the Jacobi-Davidson method for Hermitian and the Arnoldi method for non-Hermitian matrices.