- Simulation of particles of a set of quantum spins, We want to calculate some thermodynamic properties using the Metropolis algorithm for simulated annealing.

- First we start off with an initial spin containing a fixed number of 1 or -1.

- Randomly change one of the digits to the opposite and calculate the energy

and if less change the configuration if not change if it r < p.

- Then calculate the magnetization per spin and pair correlation per spin.