Progress Summary

12-02-2022

3x3 Ising Model With P.B.C: SLSQP(maxiter = 2000)
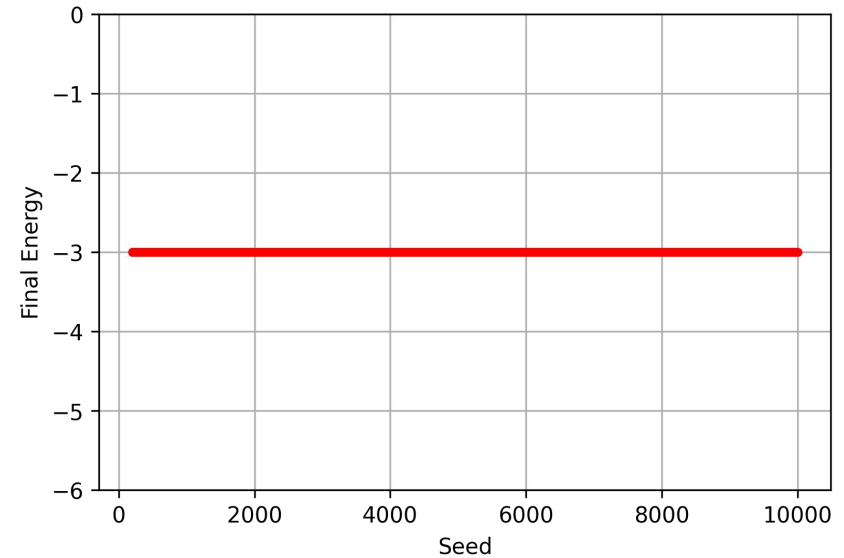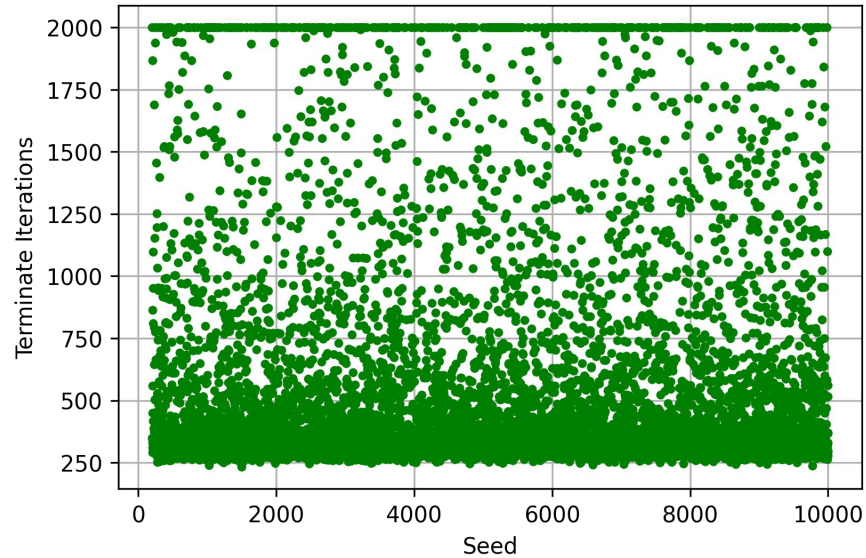
3x3 Ising Model With P.B.C: Configurations
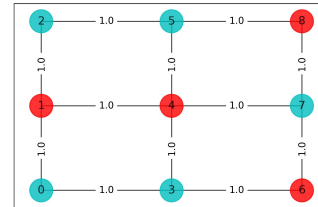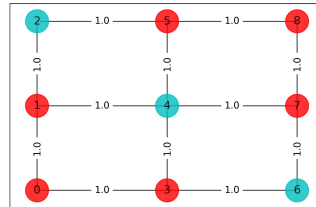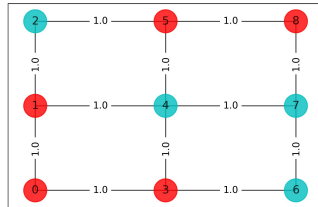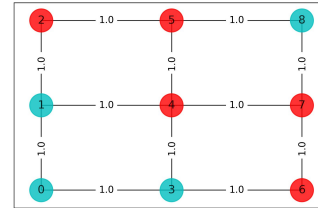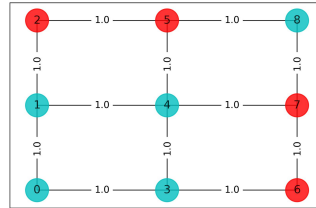
4x4 Ising Model: Qasm+COBYLA(maxiter = 2000)
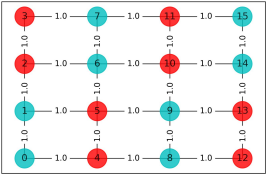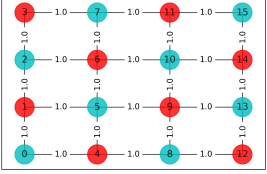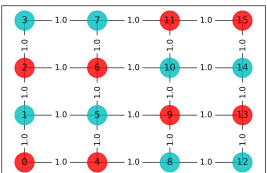
Typical Configs converged to

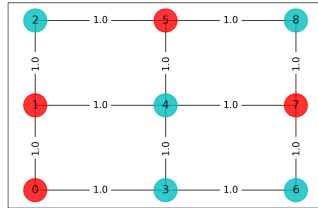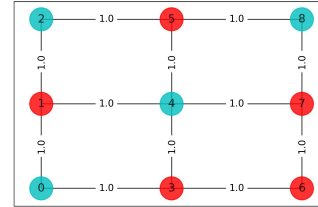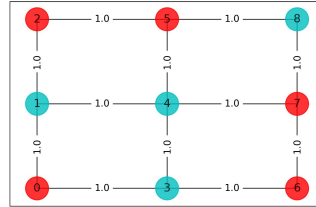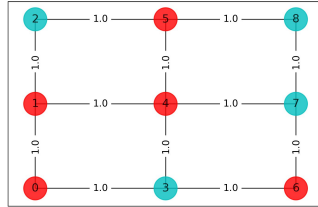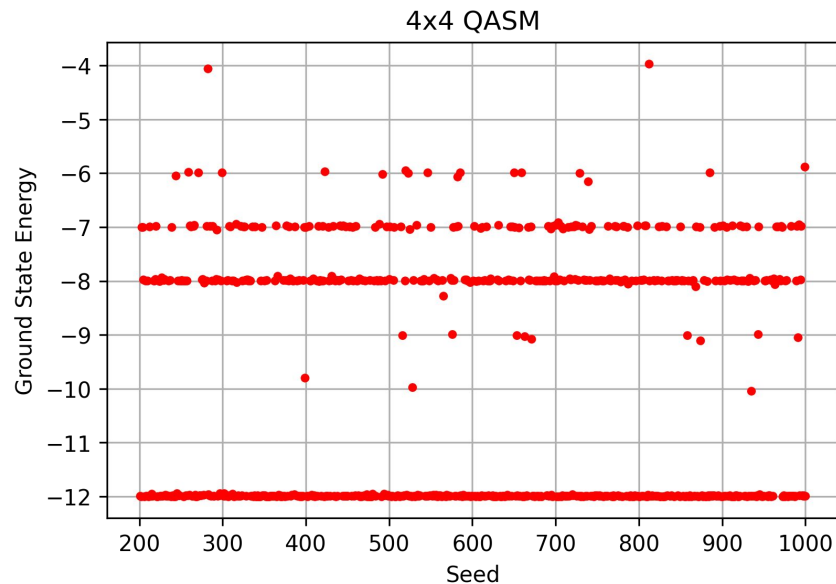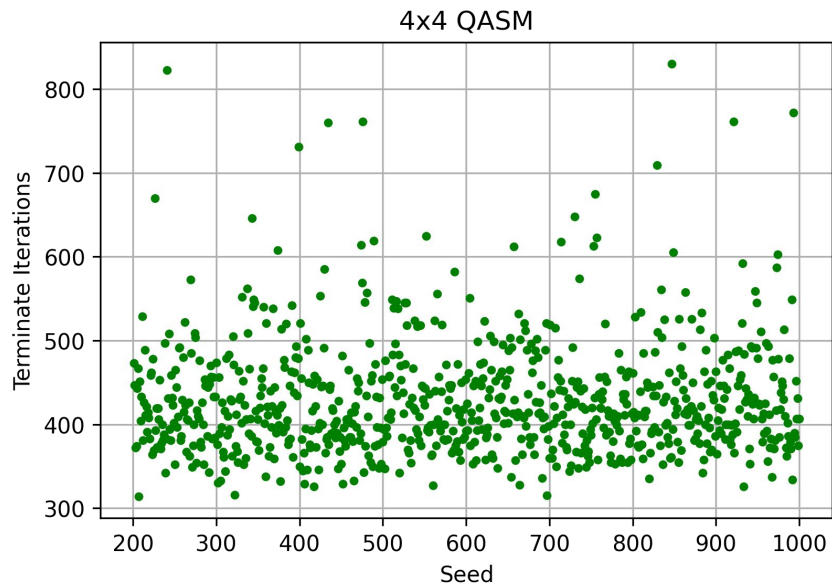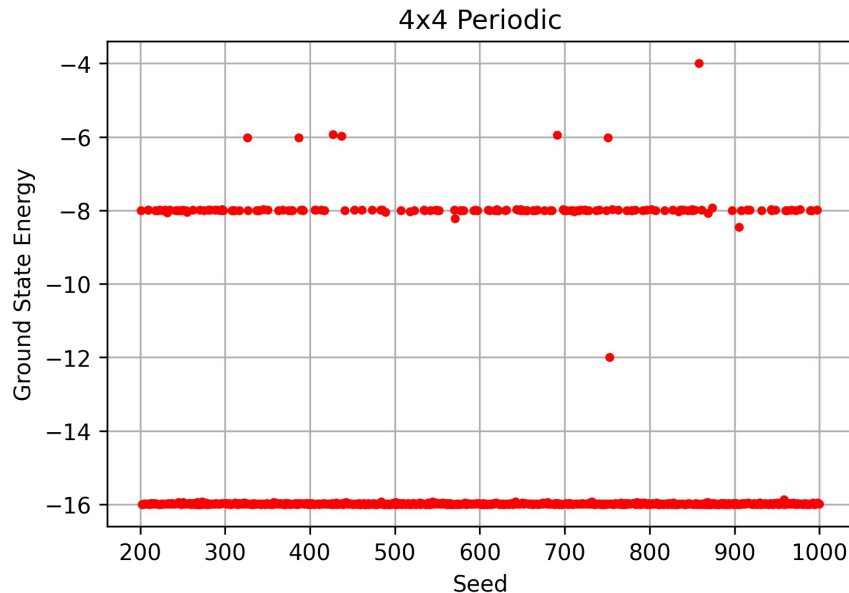| Seed	Optimizer	Terminate Iterations	Converged Energy	Time (s)	Solution	Visualization
201	COBYLA (maxiter = 2000)	473	-11.9873046875	33.2164371013641	0101101001011010	
207	COBYLA (maxiter = 2000)	314	-7.9931640625	15.3651530742645	0101101010010110	
212	COBYLA (maxiter = 2000)	381	-6.990234375	26.0232203006744	1101001010100101	

4x4 Ising Model With P.B.C
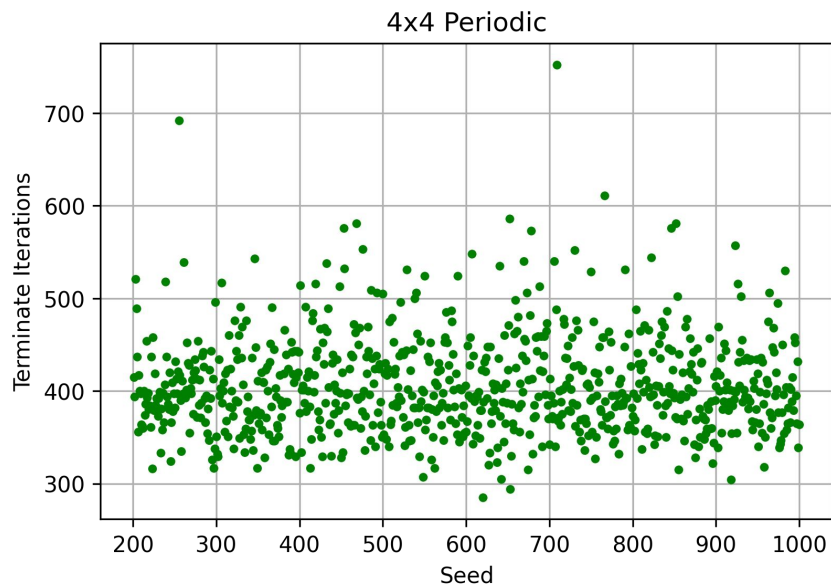
4x4 Periodic

Typical Configs converged to

| Seed	Optimizer	Terminate Iterations	Converged Energy	Time (s)	Solution	Visualization
201	COBYLA (maxiter = 2000)	415	-7.99609375	33.7266340255737	1100001111000011	
202	COBYLA (maxiter = 2000)	394	-15.99609375	17.923800945282	1010010110100101	
210	COBYLA (maxiter = 2000)	364	-7.98828125	25.2375421524048	0101010110101010	

5x5 on IBM Quantum Lab: "Simulator_statevector" from ibmq-provider
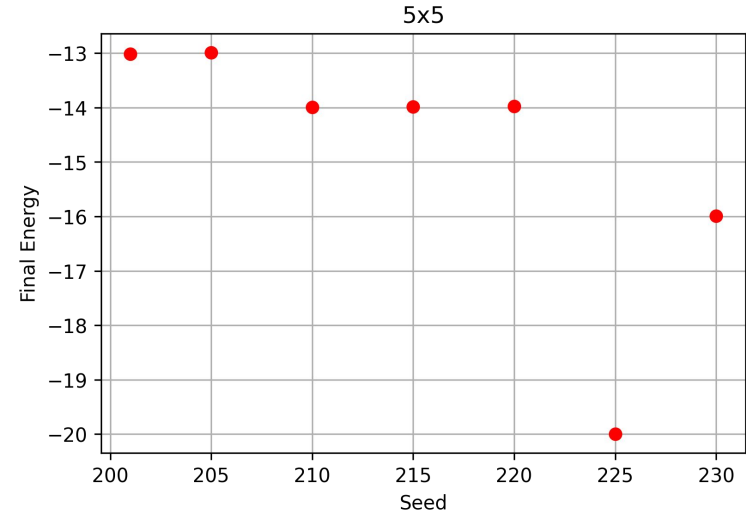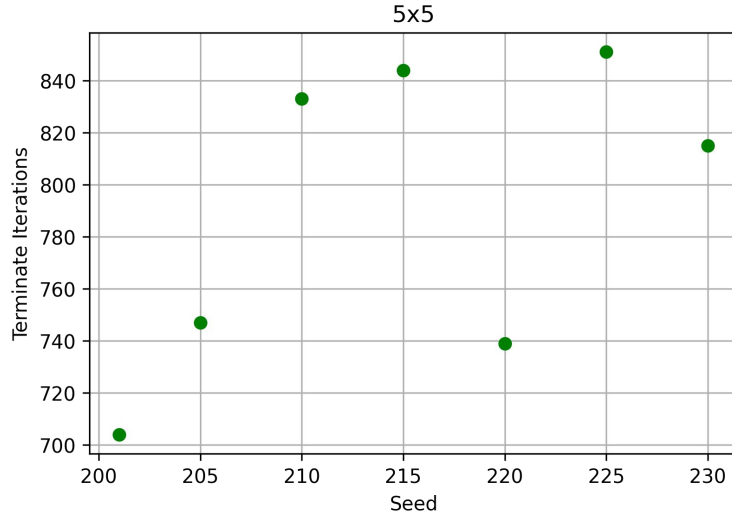
Only 1 Successful Trial in 7: seed = 225
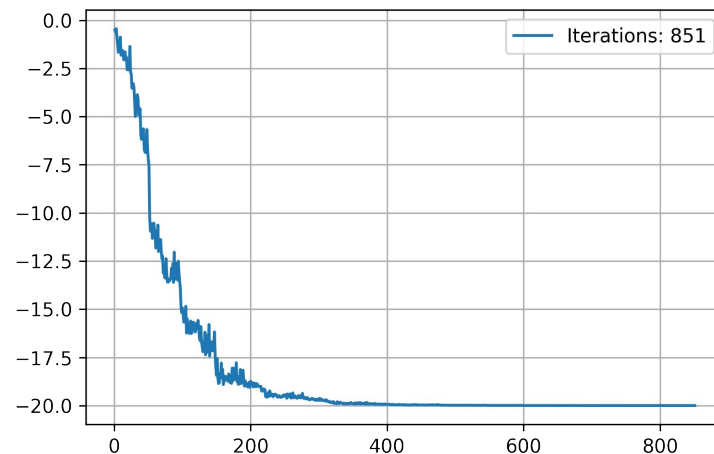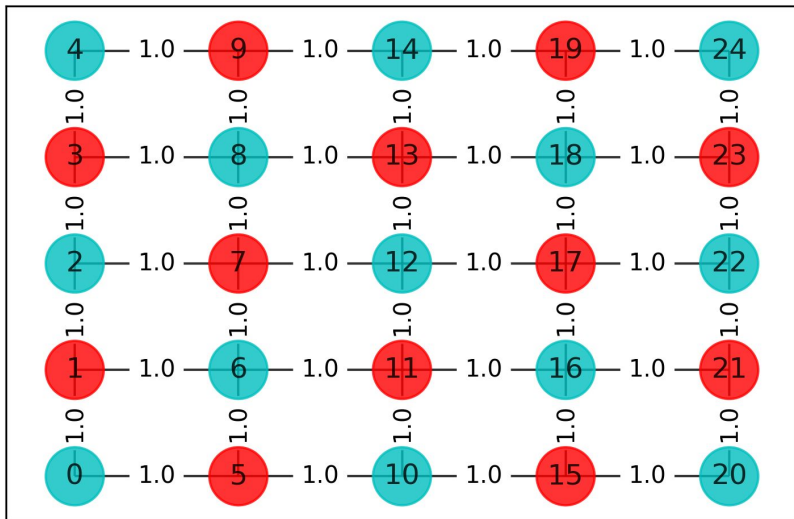
Actual Run Time: Hours for 1 seed
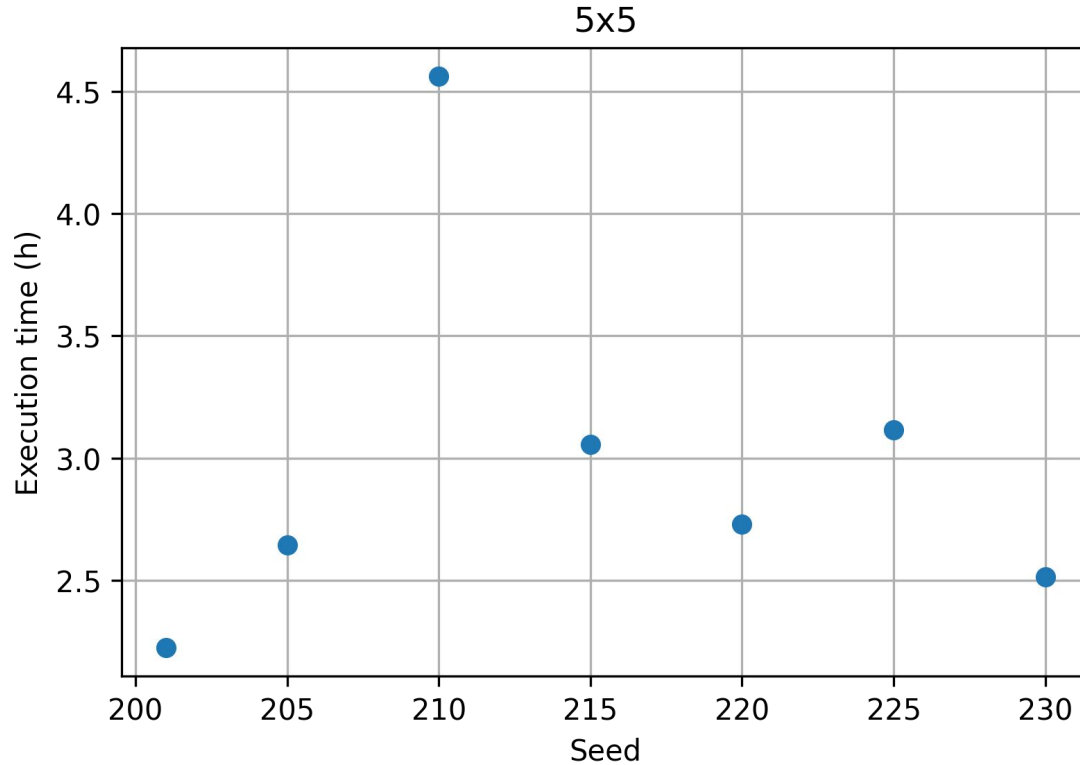
Summary

- Greater size, more metastable states
- Results of trials with P.B.C are less noisy