Qiskit Global Summer School 2022
Lecture 4 - Simulation Problems
With Jeffrey Cohn

Recommended Reading

Lec2:
https://ibm.webex.com/ibm/ldr.php?RCID=235e82bcc188ca070e00166753f022e5
Lec2 PW: RpsiC5yx

Time Evolution:
- Andrew Childs lecture notes chpt 25-27
-Theory of Trotter Error with Commutator Scaling
-A random compiler for fast Hamiltonian simulation
-Concentration for random product formulas
-Optimal Hamiltonian Simulation by Quantum Signal Processing

Quantum Phase Estimation:
- Qiskit Textbook QFT
- Qiskit Textbook QPE

VQE:
Qiskit Textbook VQE
Barren plateaus in quantum neural network training landscapes
Quantum Subspace Methods (1)
QEOM

Quantum Subspace Methods (2):
- https://arxiv.org/pdf/2103.08563.pdf
- https://arxiv.org/abs/1911.05163
- https://arxiv.org/abs/2109.06868
- https://arxiv.org/abs/1909.08925
- https://journals.aps.org/prxquantum/abstract/10.1103/PRXQuantum.2.040352

Gibbs States:
- QITE
- https://arxiv.org/abs/0911.3635
- https://www.nature.com/articles/s41534-019-0187-2
- https://arxiv.org/abs/1609.07877