Quantum Approximate Optimization Algorithm

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SFT Weekly meeting
June 1, 2023

code snippet

Example

```
from qiskit.quantum_info import Statevector
zero = Statevector.from_int(0,2)
one = Statevector.from_int(1,2)

psi = one^zero^zero
psi_m = 1/sqrt(2)*(zero^zero^one)+
        1/sqrt(2)*(one^one^one)
```

$\frac{\sqrt{2}}{2}|001\rangle + \frac{\sqrt{2}}{2}|111\rangle$

code snippet

Example

```
from qiskit.quantum_info import Pauli
ZOZ1 = Pauli("ZZI")
from qiskit.opflow.primitive_ops import PauliOp
H_cut = PauliOp(Pauli("ZZI"))+PauliOp(Pauli("ZIZ"))
H_ising = -0.5*(Z^Z^I)+2*(Z^I^Z)-(I^Z^Z)+(Z^I^Z)
  -5*(I^I^Z)

H_ising_hat = psi.expectation_value(H_ising)
```