
OpenFermion-Cirq Documentation

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The OpenFermion Developers

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1.1 Gates

1.1.1 Two-Qubit Gates

openfermioncirq.FSWAP
openfermioncirq.XXYX
openfermioncirq.YXXY
openfermioncirq.rot11
openfermioncirq.FSwapPowGate
openfermioncirq.Rxyy
openfermioncirq.Ryxy
openfermioncirq.Rzz
openfermioncirq.XXYYPowGate
openfermioncirq.YXXYPowGate

1.1.2 Three-Qubit Gates

openfermioncirq.CXXYY
openfermioncirq.CYXXY
openfermioncirq.rot111
openfermioncirq.CRxyy
openfermioncirq.CRyxy
openfermioncirq.CXXYYPowGate
openfermioncirq.CYXXYPowGate

1.1.3 Four-Qubit Gates

```
openfermioncirq.DoubleExcitation
openfermioncirq.DoubleExcitationGate
```

1.1.4 Fermionic Simulation Gates

```
openfermioncirq.
fermionic_simulation_gates_from_interaction_operator
openfermioncirq.
CubicFermionicSimulationGate
openfermioncirq.
ParityPreservingFermionicGate
openfermioncirq.
QuadraticFermionicSimulationGate
openfermioncirq.
QuarticFermionicSimulationGate
```

1.2 Primitives

```
openfermioncirq.bogoliubov_transform
openfermioncirq.ffft
openfermioncirq.
prepare_gaussian_state
openfermioncirq.
prepare_slater_determinant
openfermioncirq.swap_network
```

1.3 Hamiltonian Simulation

```
openfermioncirq.simulate_trotter
openfermioncirq.trotter.
LINEAR_SWAP_NETWORK
openfermioncirq.trotter.LOW_RANK
openfermioncirq.trotter.
SPLIT_OPERATOR
openfermioncirq.trotter.
TrotterAlgorithm
openfermioncirq.trotter.TrotterStep
```

1.3.1 Trotter Algorithms

```
openfermioncirq.trotter.
LinearSwapNetworkTrotterAlgorithm
openfermioncirq.trotter.
LowRankTrotterAlgorithm
```

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```
openfermioncirq.trotter.  
SplitOperatorTrotterAlgorithm
```

1.4 Variational Algorithms

```
openfermioncirq.HamiltonianObjective  
openfermioncirq.VariationalAnsatz  
openfermioncirq.VariationalObjective  
openfermioncirq.VariationalStudy
```

1.4.1 Variational Ansatzes

```
openfermioncirq.LowRankTrotterAnsatz  
openfermioncirq.  
SplitOperatorTrotterAnsatz  
openfermioncirq.  
SwapNetworkTrotterAnsatz  
openfermioncirq.  
SwapNetworkTrotterHubbardAnsatz
```

1.5 Optimization

```
openfermioncirq.optimization.COBYLA  
openfermioncirq.optimization.L_BFGS_B  
openfermioncirq.optimization.  
NELDER_MEAD  
openfermioncirq.optimization.SLSQP  
openfermioncirq.optimization.BlackBox  
openfermioncirq.optimization.  
OptimizationAlgorithm  
openfermioncirq.optimization.  
OptimizationParams  
openfermioncirq.optimization.  
OptimizationResult  
openfermioncirq.optimization.  
OptimizationTrialResult  
openfermioncirq.optimization.  
ScipyOptimizationAlgorithm  
openfermioncirq.optimization.  
StatefulBlackBox
```

CHAPTER 2

Indices and tables

- `genindex`
- `modindex`
- `search`