

Hardcoded vs Qiskit Pipeline Comparison Summary

generated_utc: 2026-02-13T17:00:09.951132+00:00

all_pass: True

l_values: [2, 3, 4]

thresholds: {"ground_state_energy_abs_delta": 1e-08, "fidelity_max_abs_delta": 0.0001, "energy_trotter_max_abs_delta": 0.001,

hardcoded_qiskit_import_isolation: {'pass': True, 'qpe_adapter_range': {'start_line': 299, 'end_line': 416}, 'qiskit_imports':

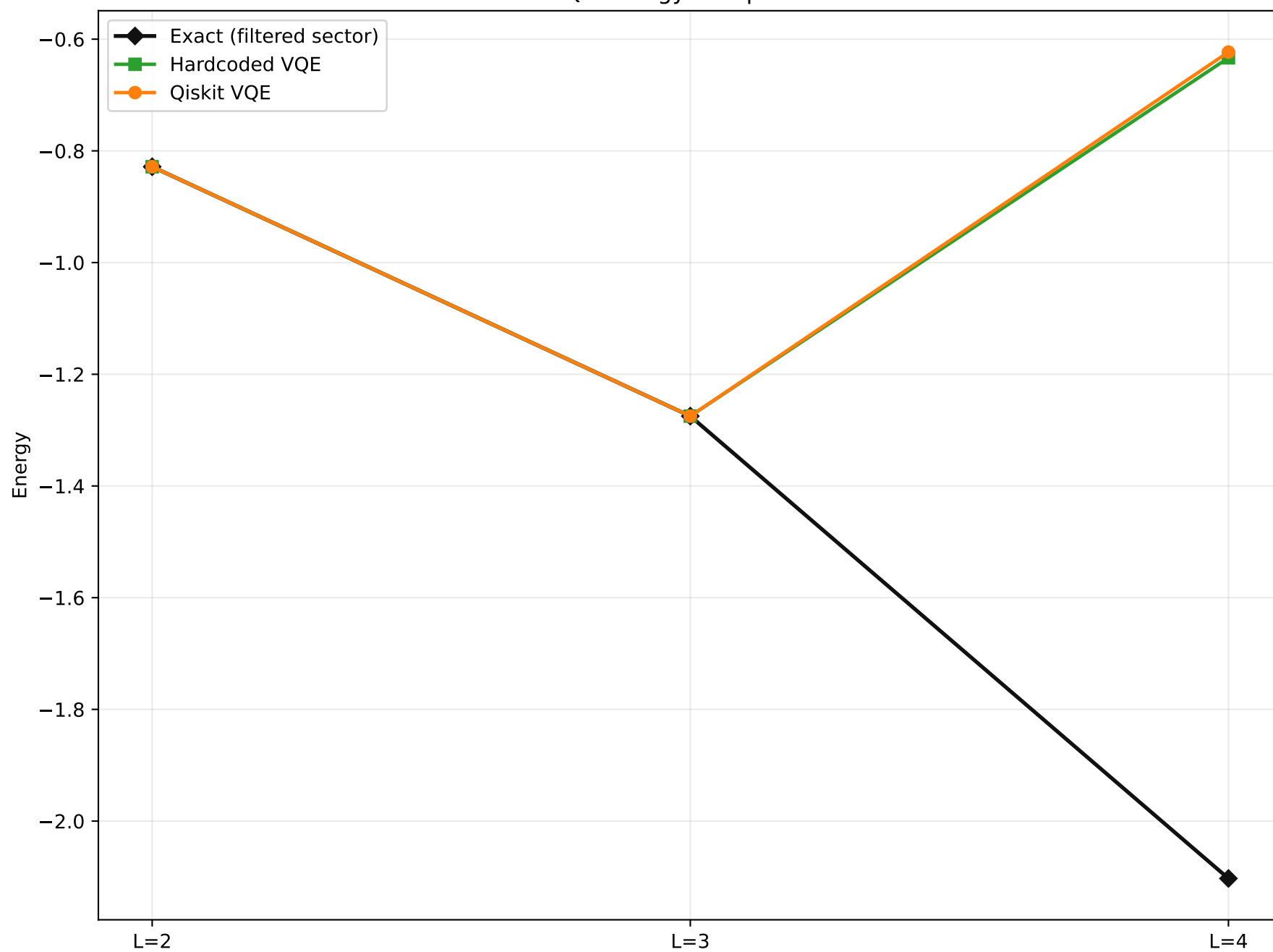
Per-L pass flags:

L=2 pass=True metrics_json=Tests/artifacts/hardcoded_vs_qiskit_pipeline_L2_metrics.json

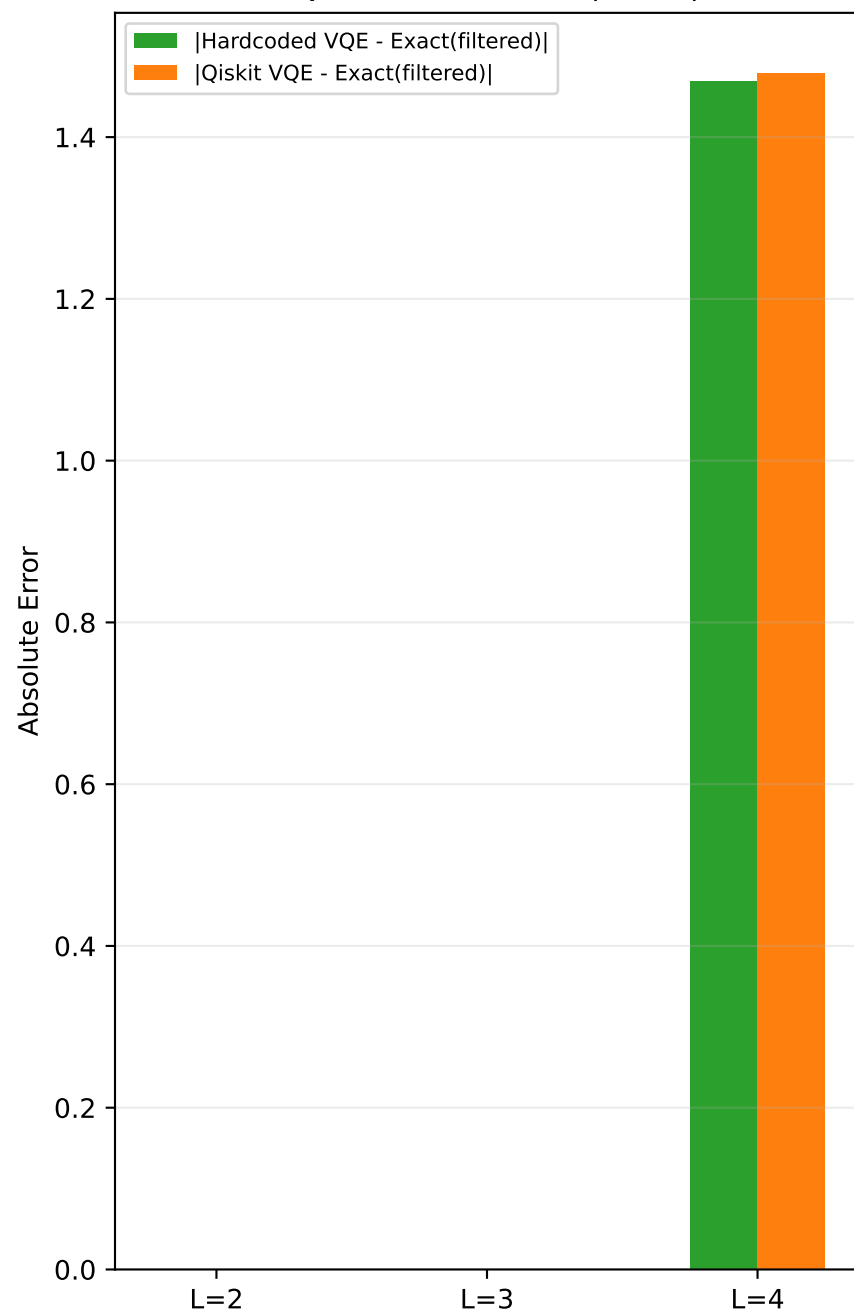
L=3 pass=True metrics_json=Tests/artifacts/hardcoded_vs_qiskit_pipeline_L3_metrics.json

L=4 pass=True metrics_json=Tests/artifacts/hardcoded_vs_qiskit_pipeline_L4_metrics.json

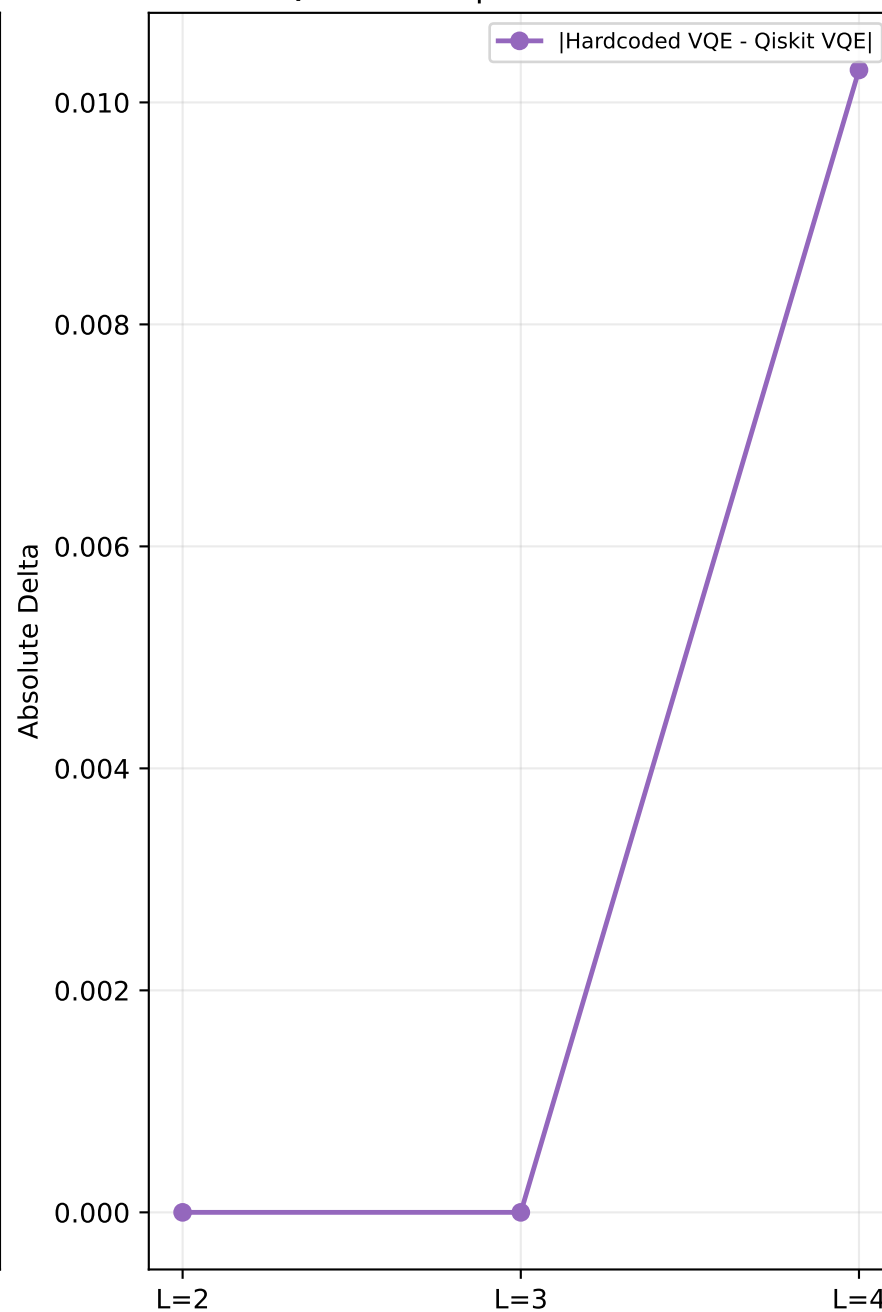
VQE Energy Comparison



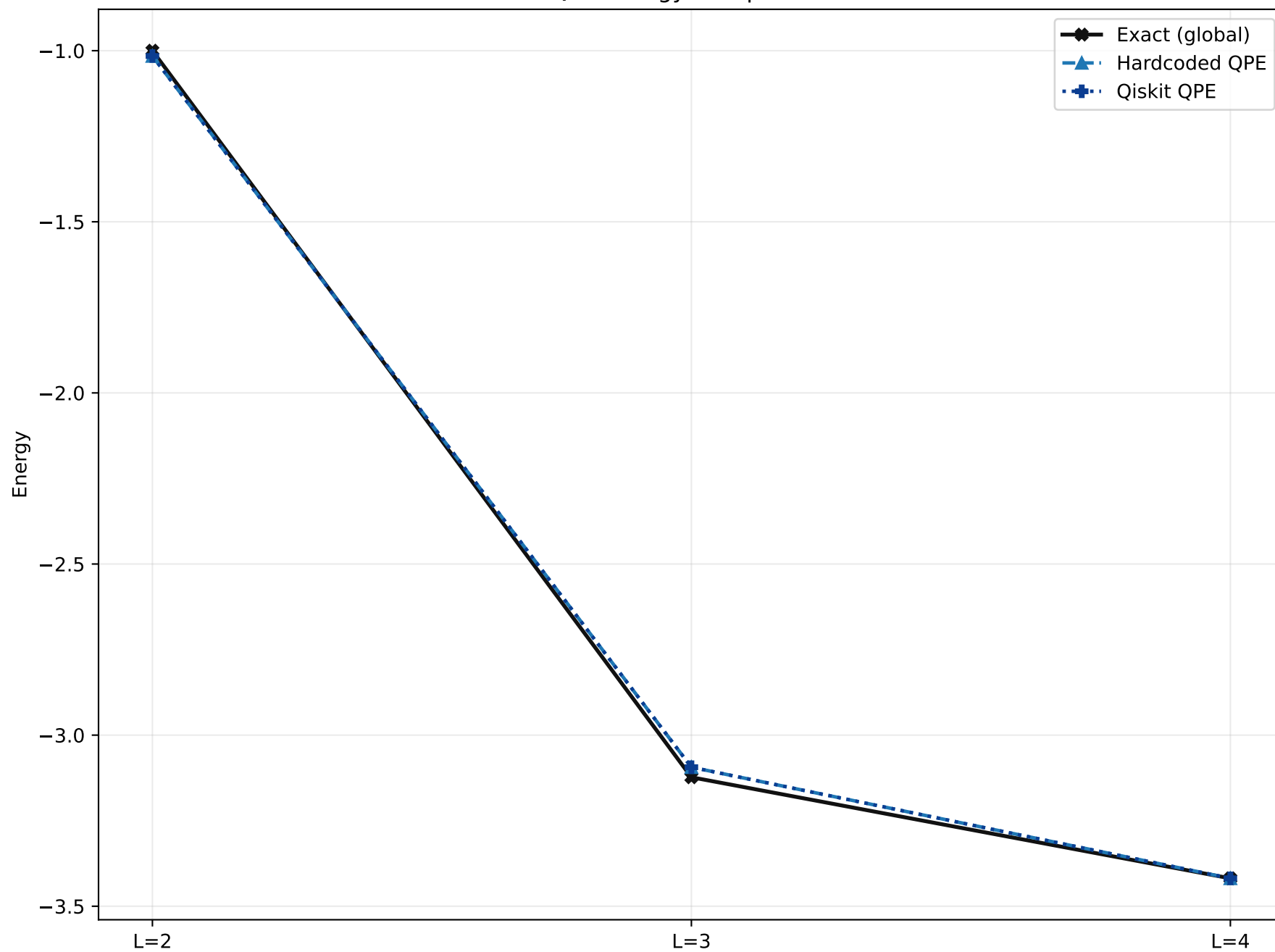
VQE Absolute Error (linear)

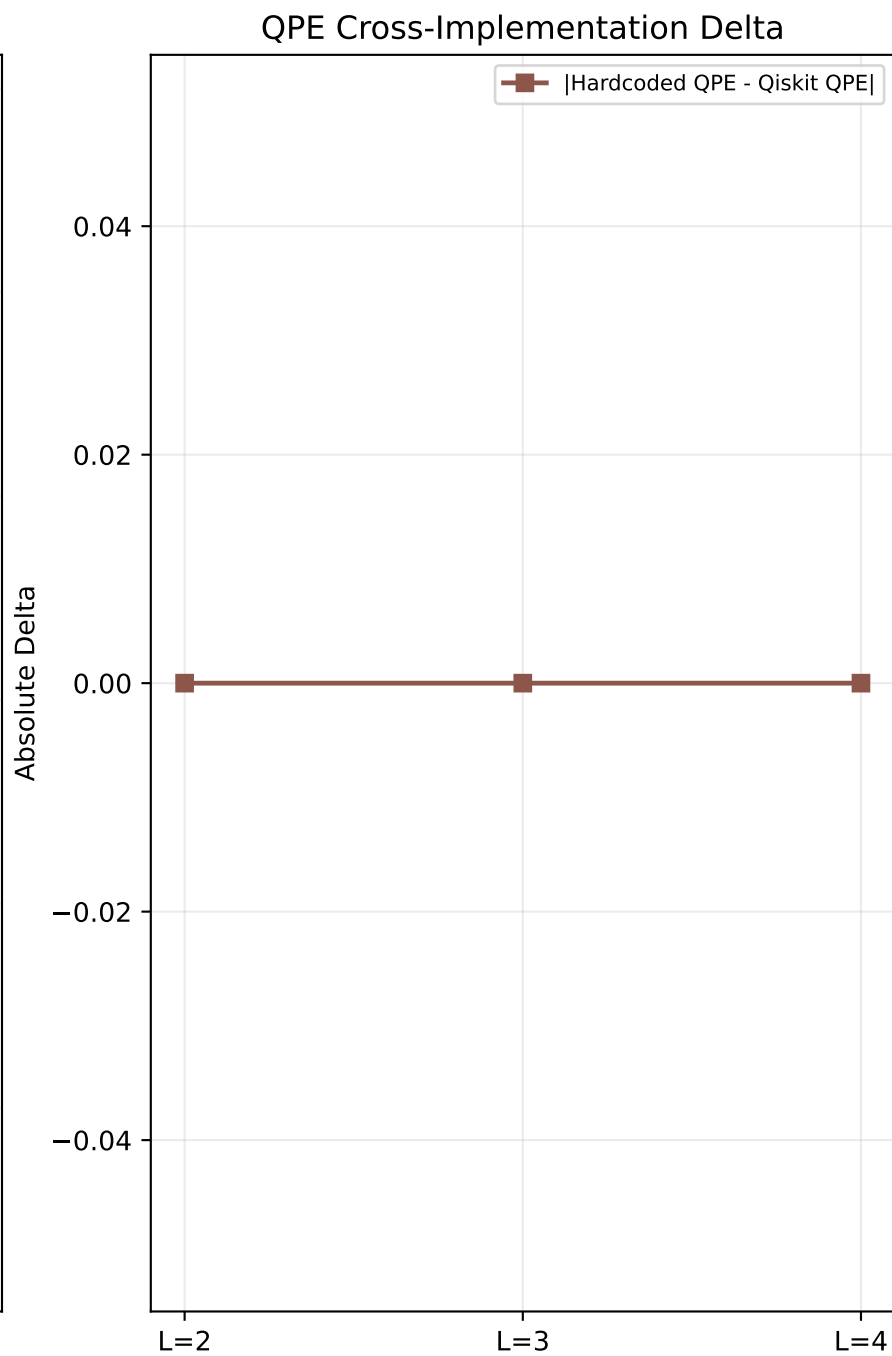
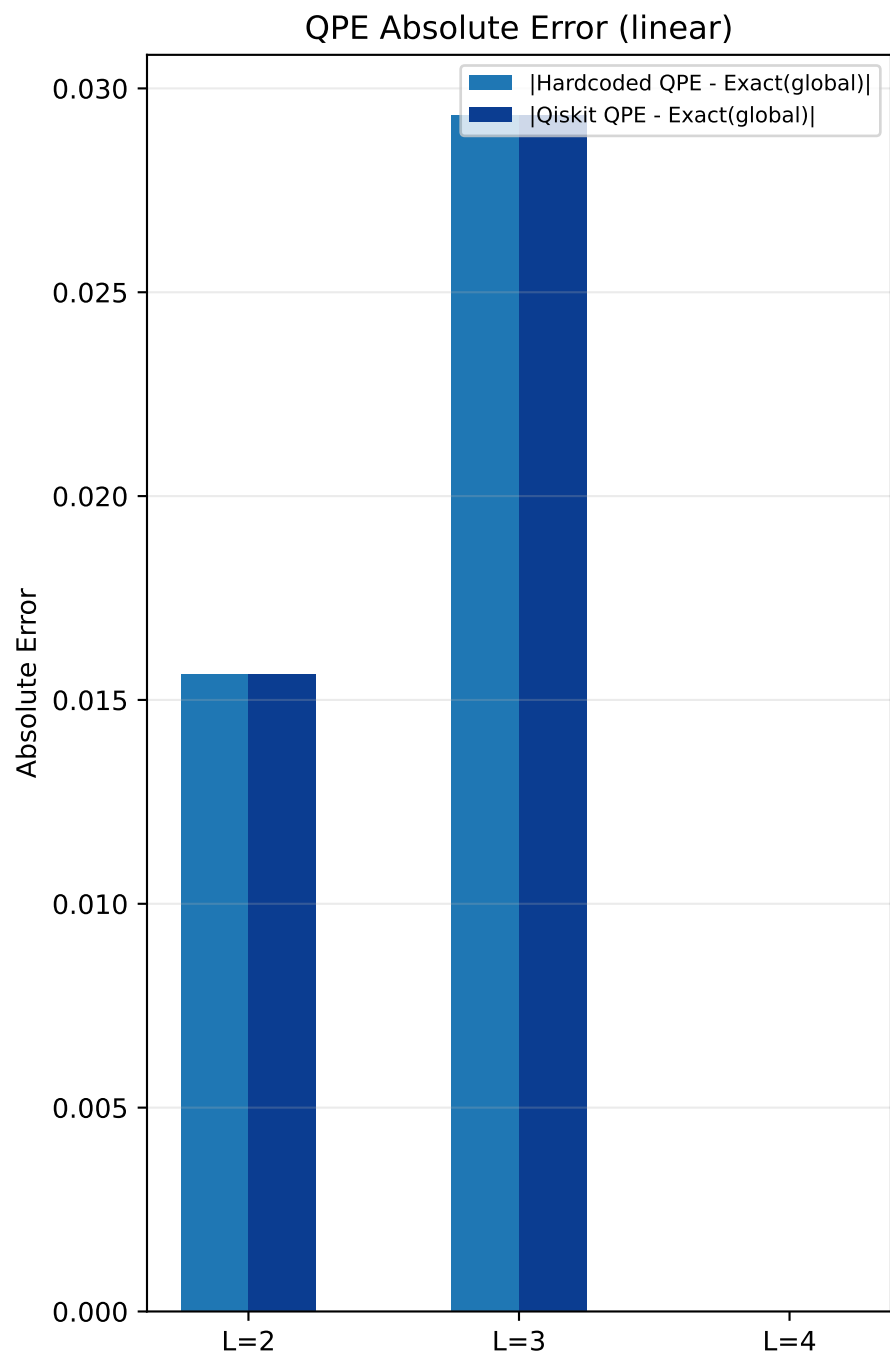


VQE Cross-Implementation Delta

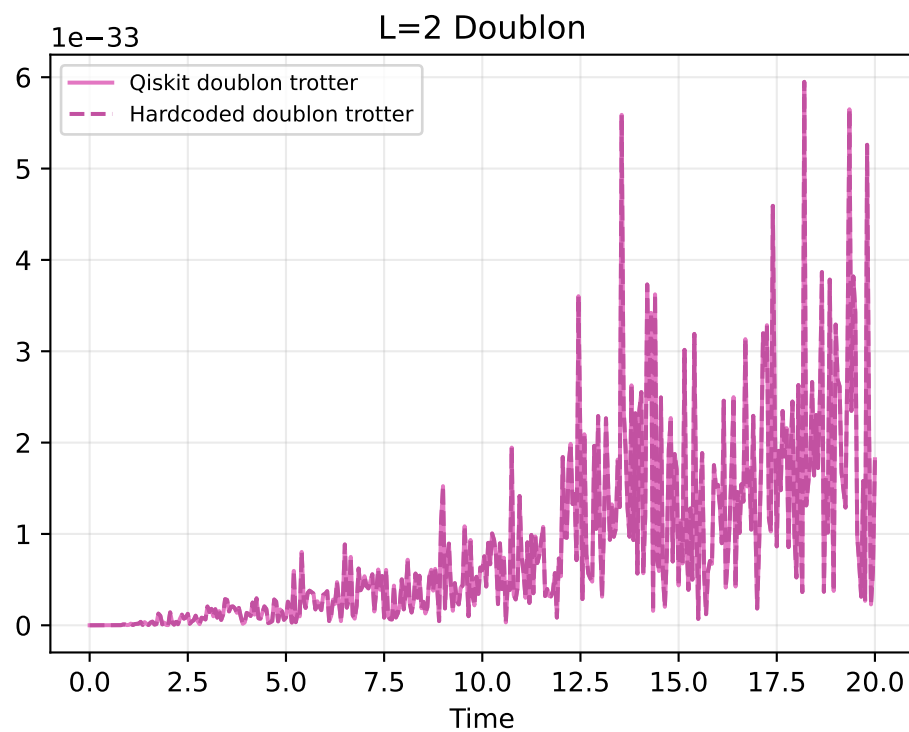
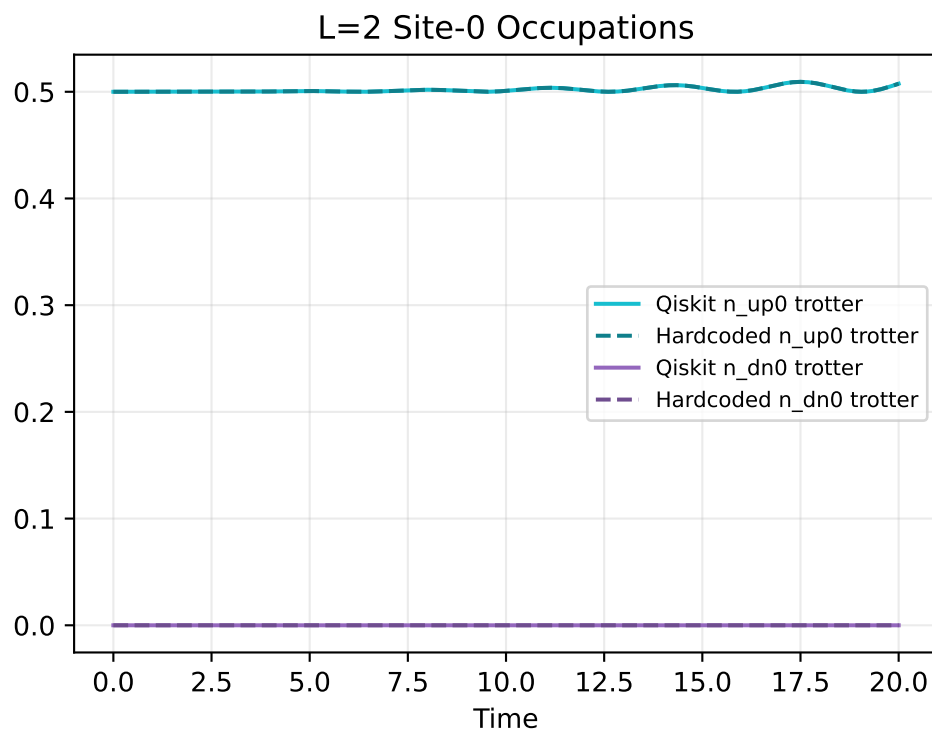
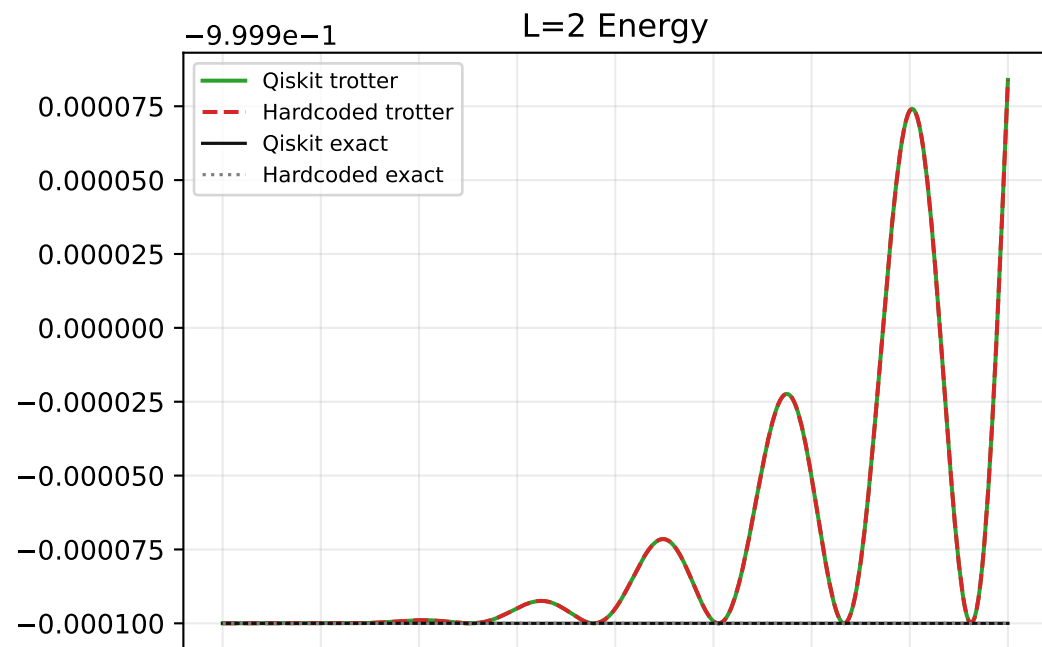
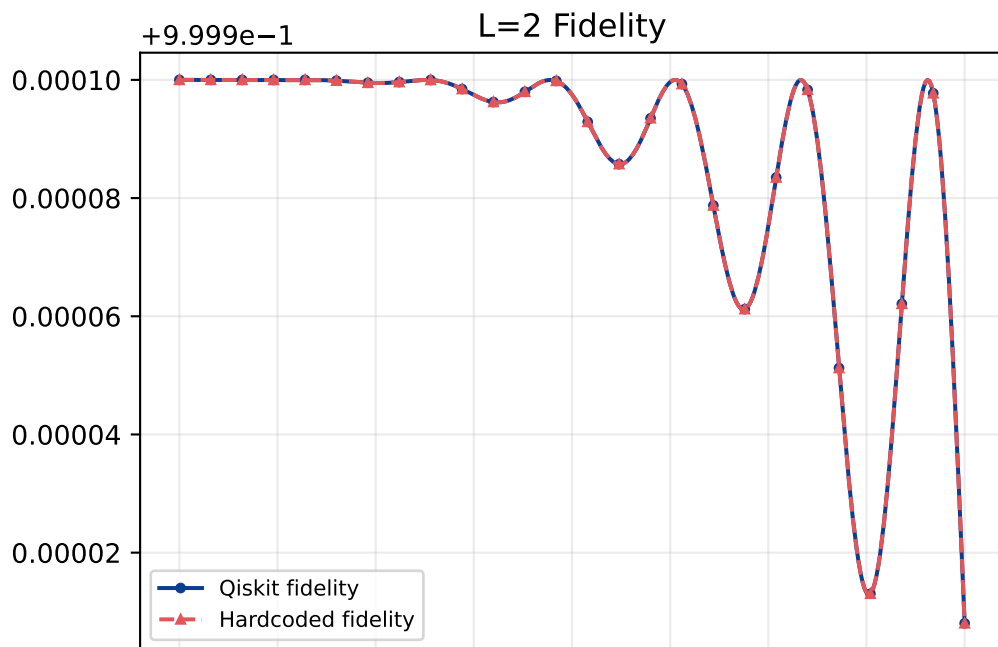


QPE Energy Comparison



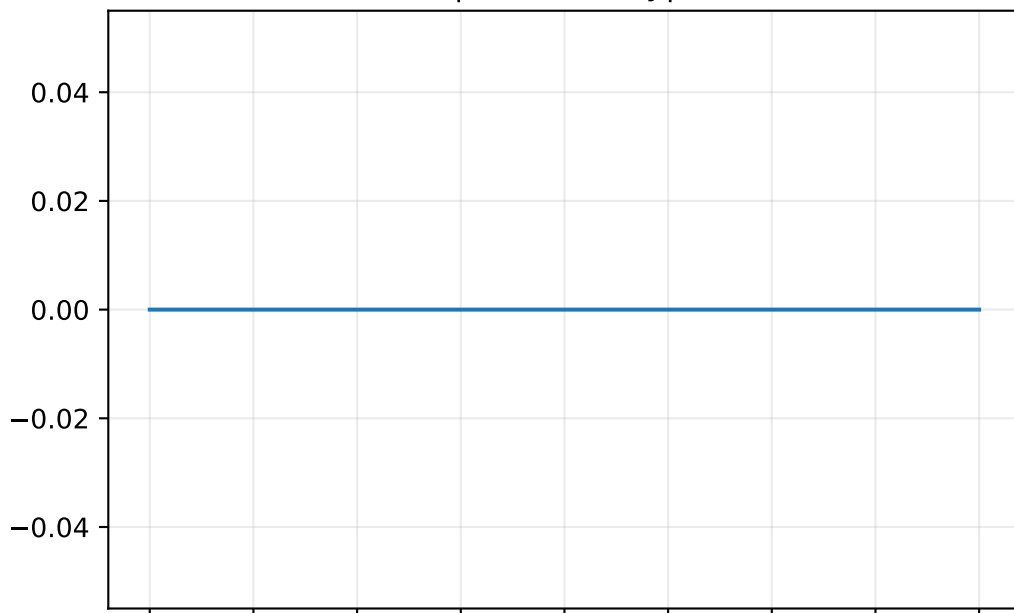


Bundle Page: L=2 Trajectory Comparison

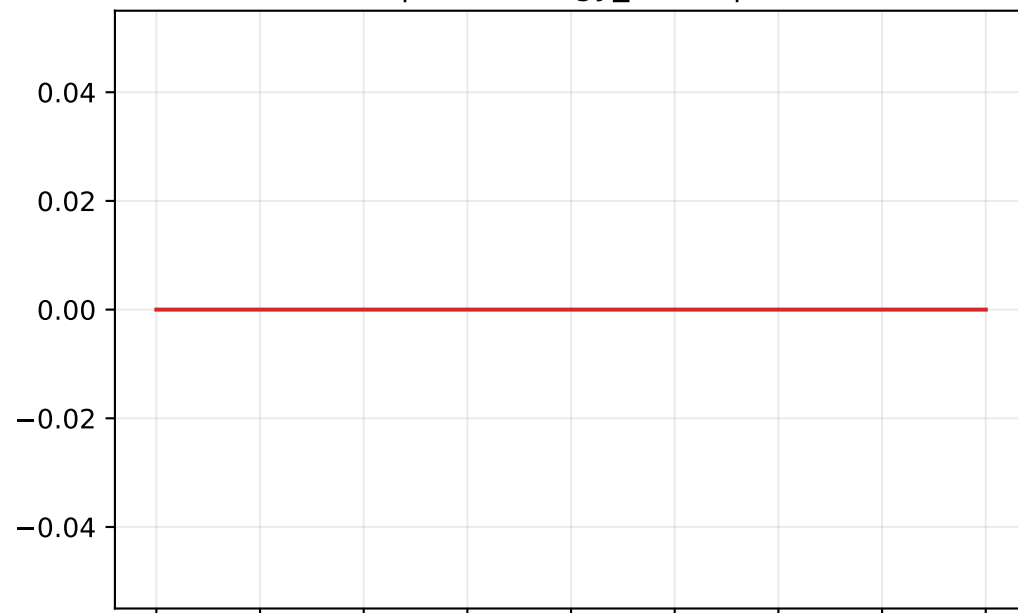


Bundle Delta Diagnostics L=2

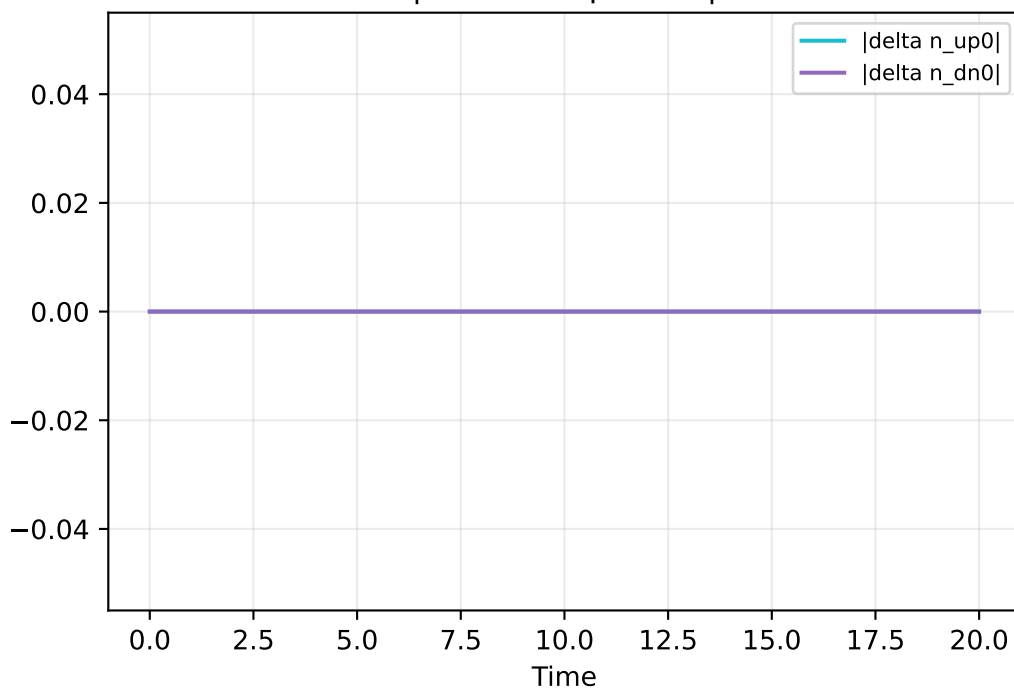
|delta fidelity|



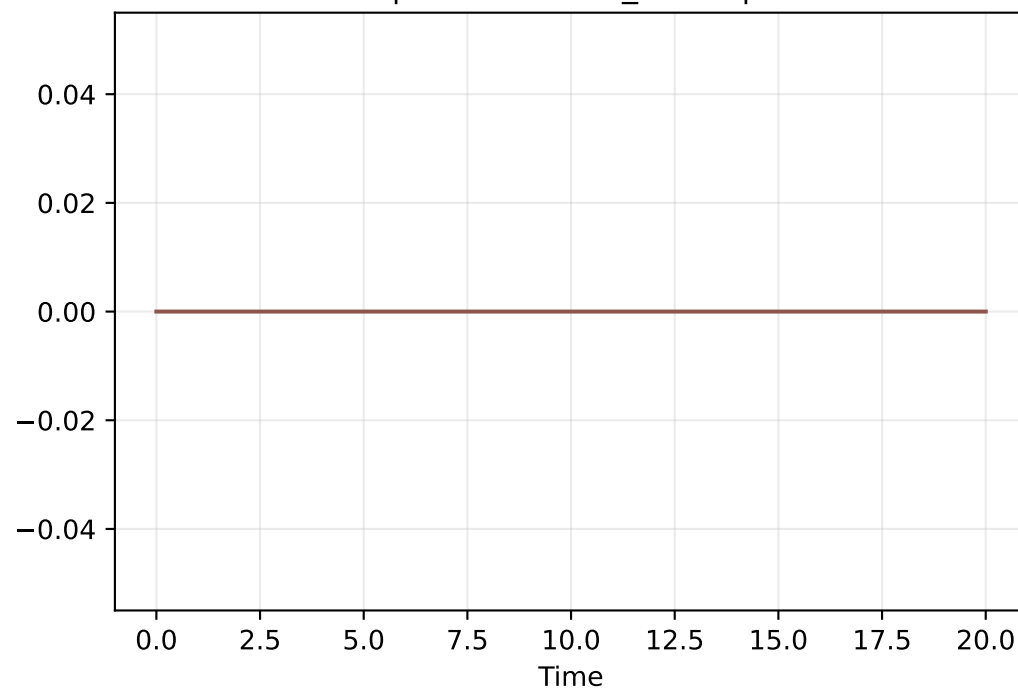
|delta energy_trotter|



|delta occupations|



|delta doublon_trotter|



Bundle metrics page L=2

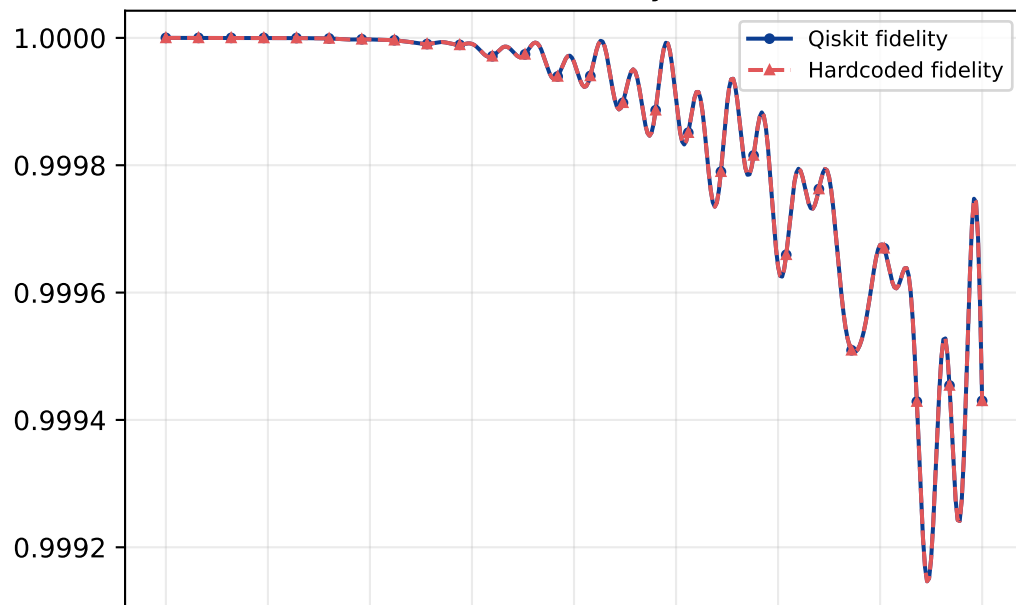
Trotterization comparison uses each path's configured initial state.
For VQE-init runs, both exact(t) and trotter(t) start from the VQE ansatz state.

```
ground_state_energy_abs_delta = 0.0
fidelity_max/mean/final = 0.0 / 0.0 / 0.0
energy_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_up_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_dn_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
doublon_trotter_max/mean/final = 0.0 / 0.0 / 0.0
```

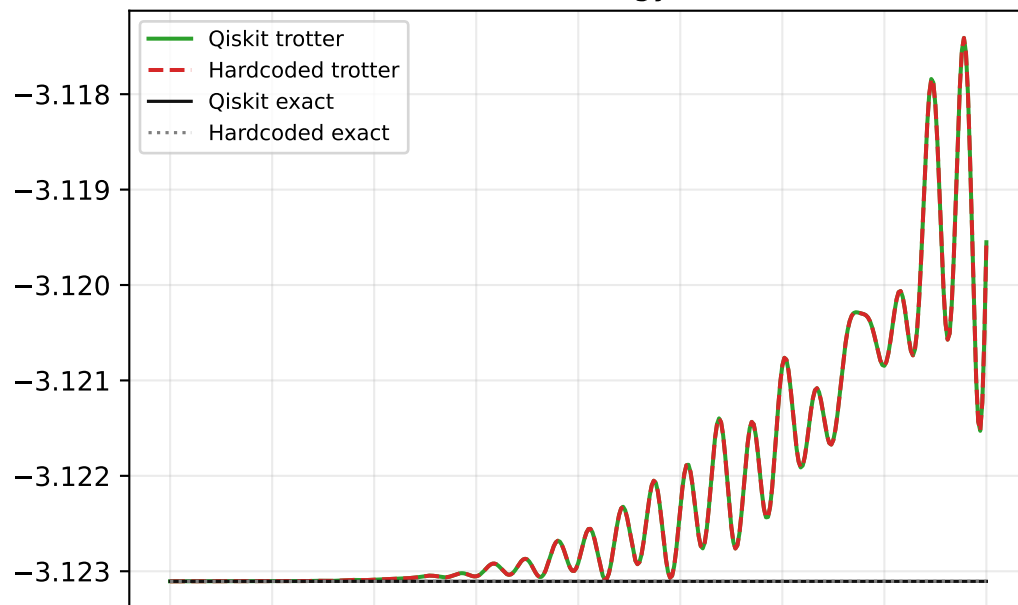
```
checks = {'ground_state_energy_abs_delta': True, 'fidelity_max_abs_delta': True, 'energy_trotter_max_abs_delta': True, 'n_up_s
PASS = True
```


Bundle Page: L=3 Trajectory Comparison

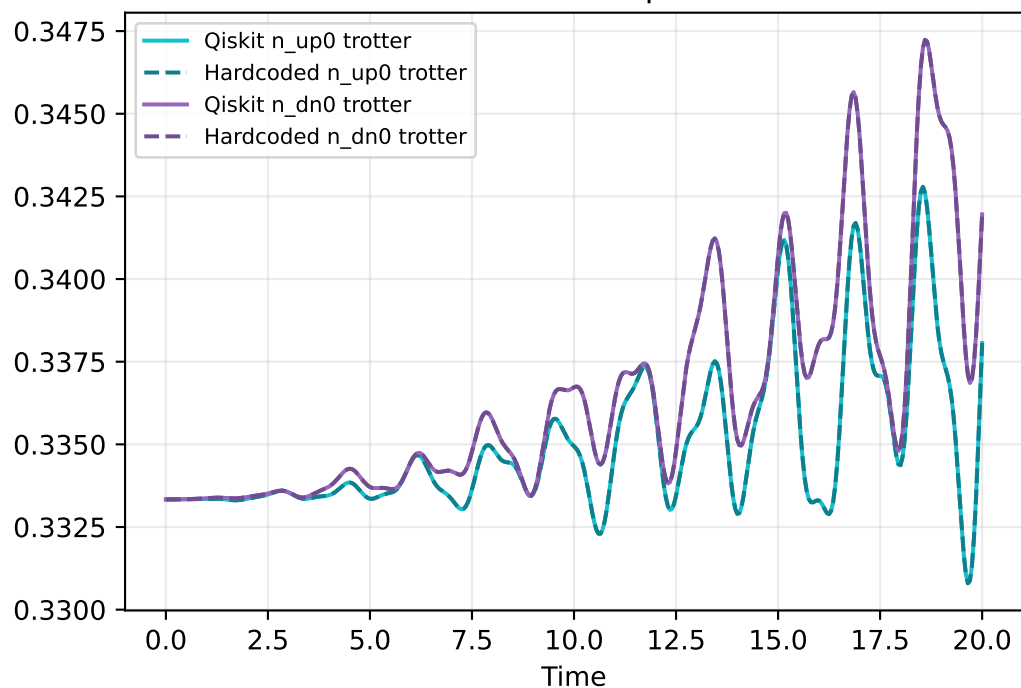
L=3 Fidelity



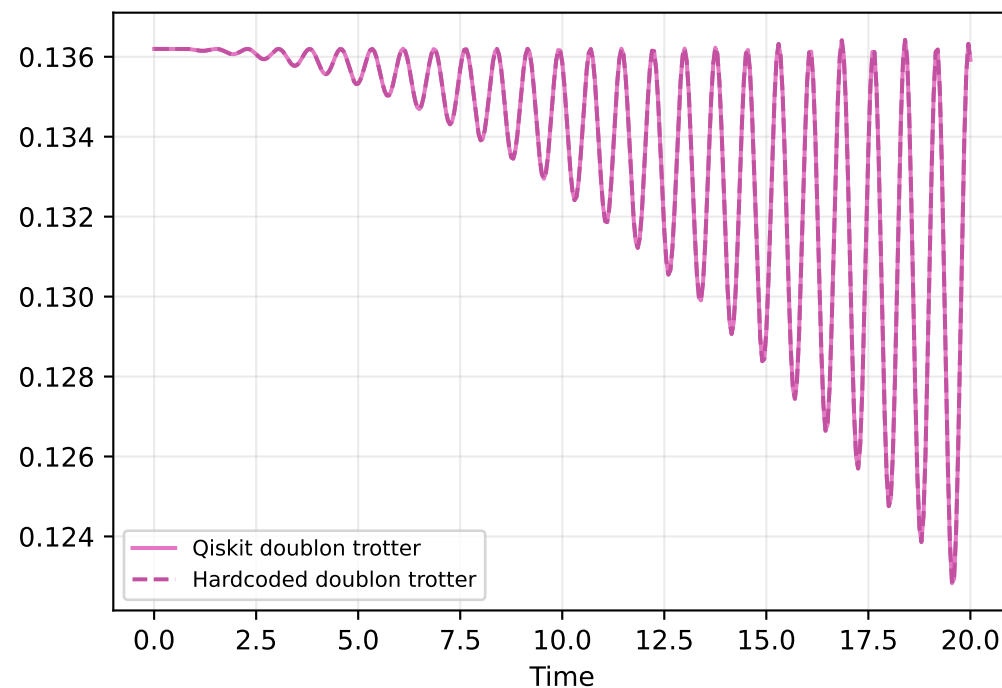
L=3 Energy



L=3 Site-0 Occupations

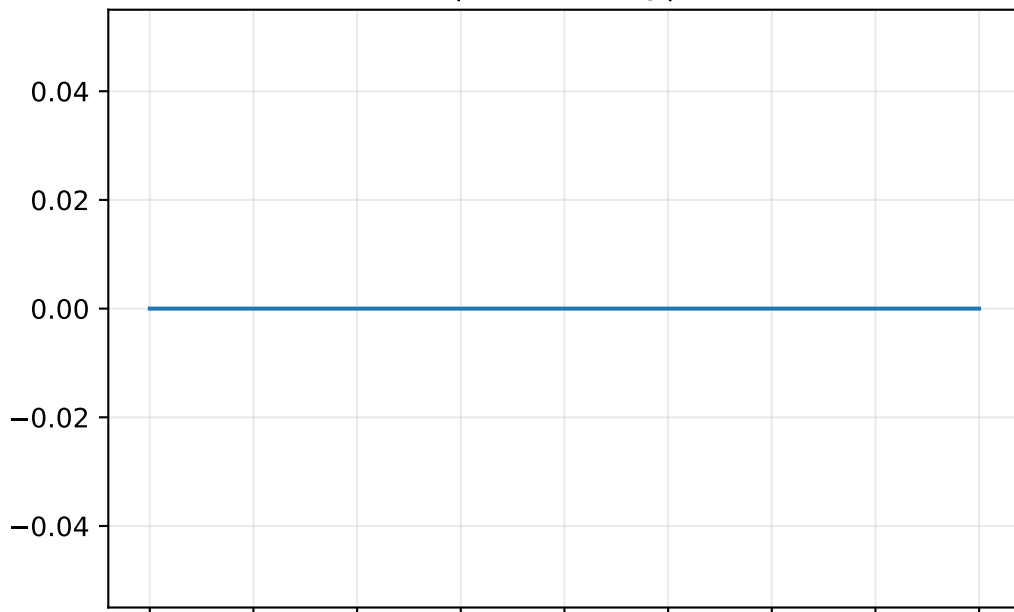


L=3 Doublon

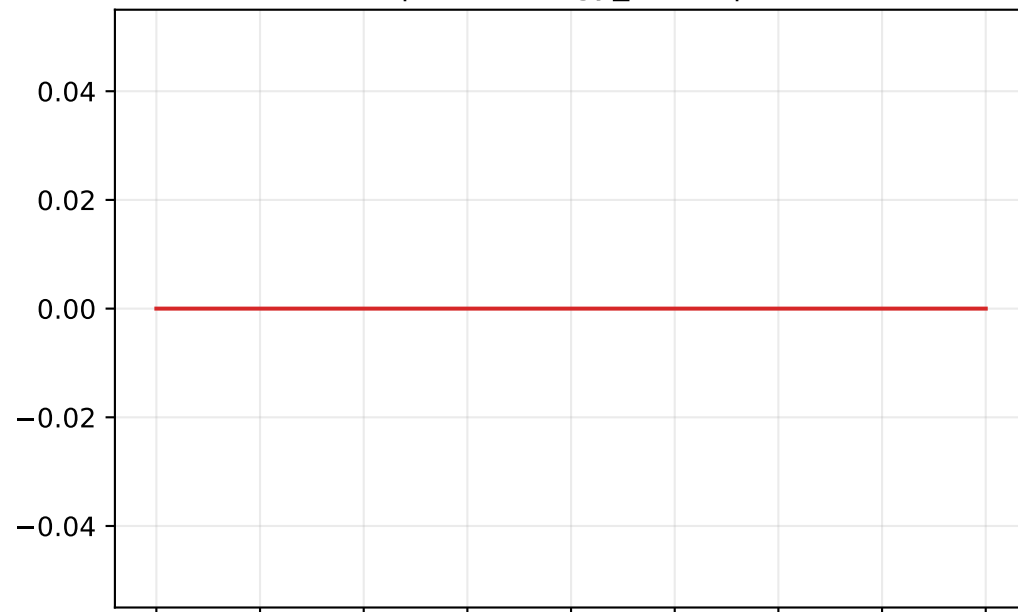


Bundle Delta Diagnostics L=3

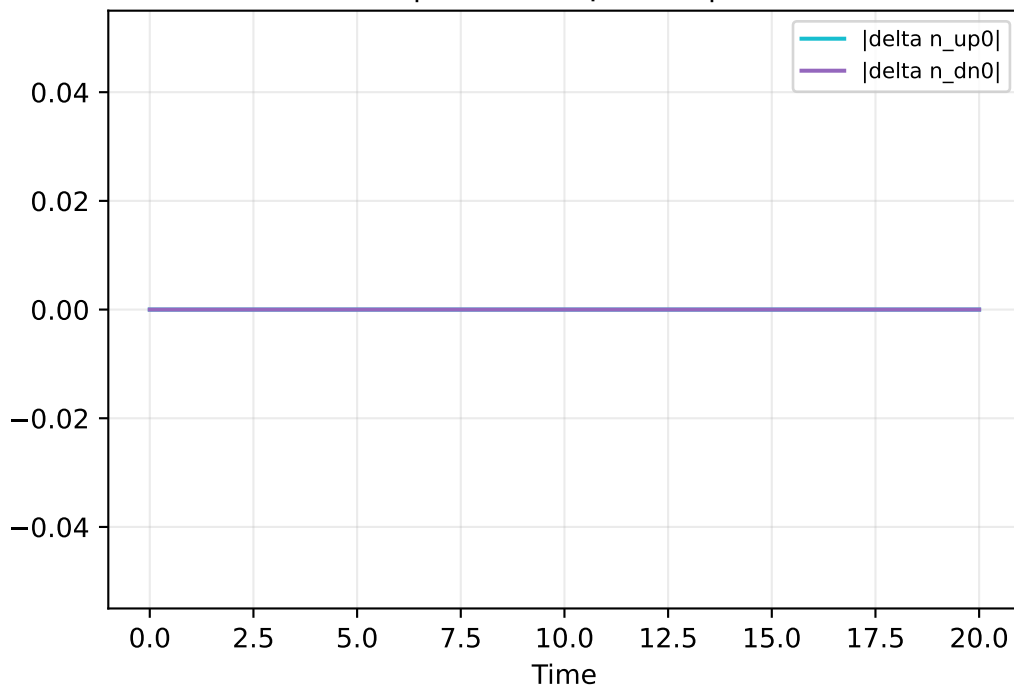
$|\text{delta fidelity}|$



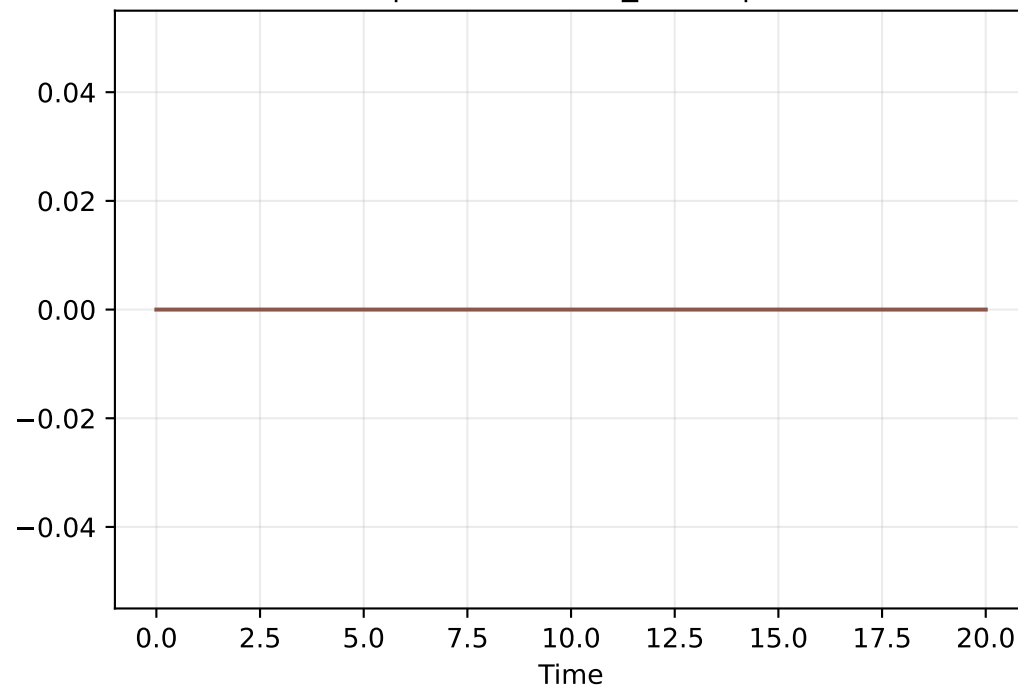
$|\text{delta energy_trotter}|$



$|\text{delta occupations}|$



$|\text{delta doublon_trotter}|$



Bundle metrics page L=3

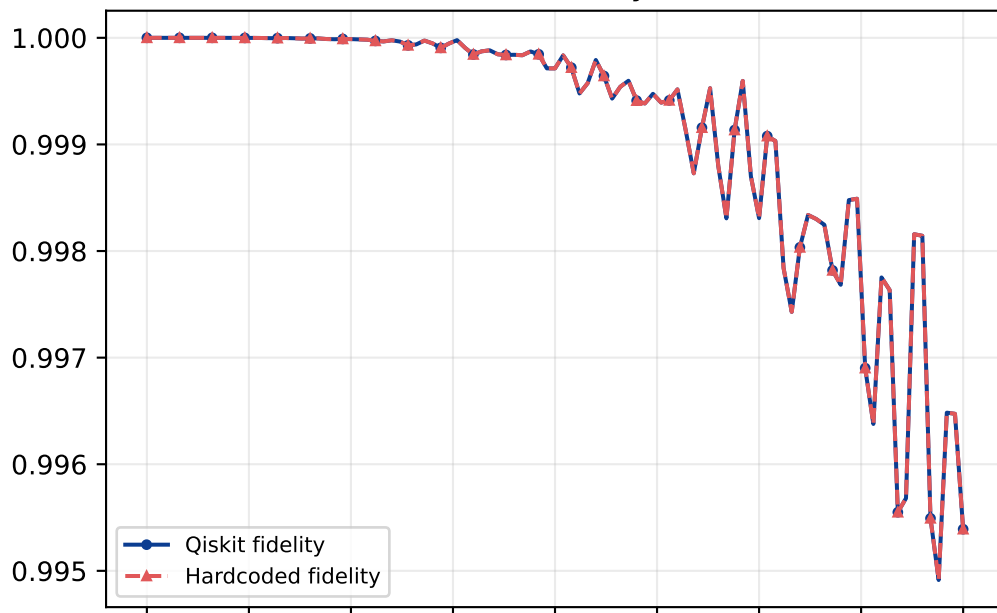
Trotterization comparison uses each path's configured initial state.
For VQE-init runs, both exact(t) and trotter(t) start from the VQE ansatz state.

```
ground_state_energy_abs_delta = 0.0
fidelity_max/mean/final = 0.0 / 0.0 / 0.0
energy_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_up_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_dn_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
doublon_trotter_max/mean/final = 0.0 / 0.0 / 0.0
```

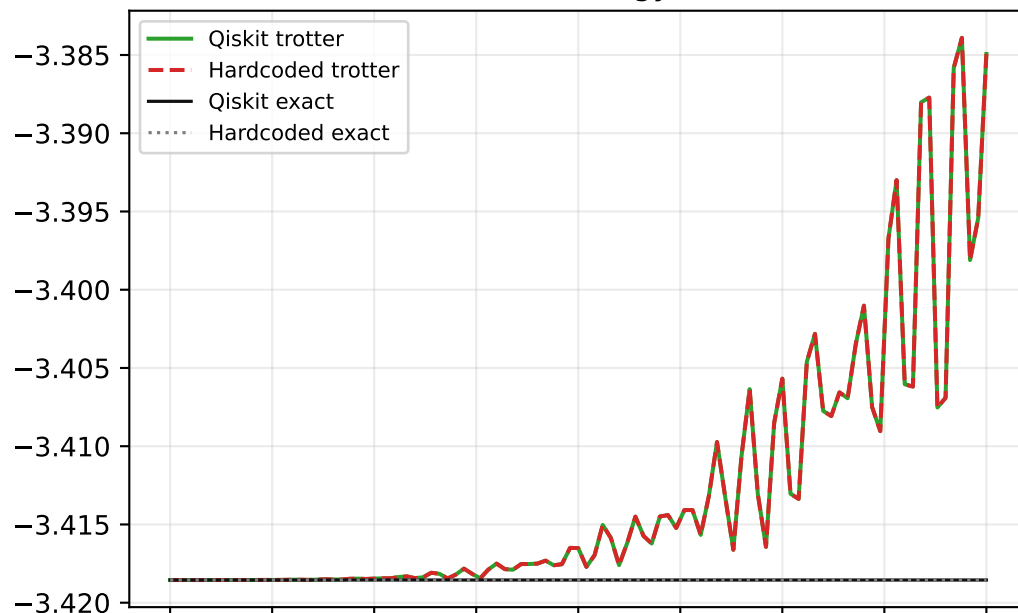
```
checks = {'ground_state_energy_abs_delta': True, 'fidelity_max_abs_delta': True, 'energy_trotter_max_abs_delta': True, 'n_up_s
PASS = True
```

Bundle Page: L=4 Trajectory Comparison

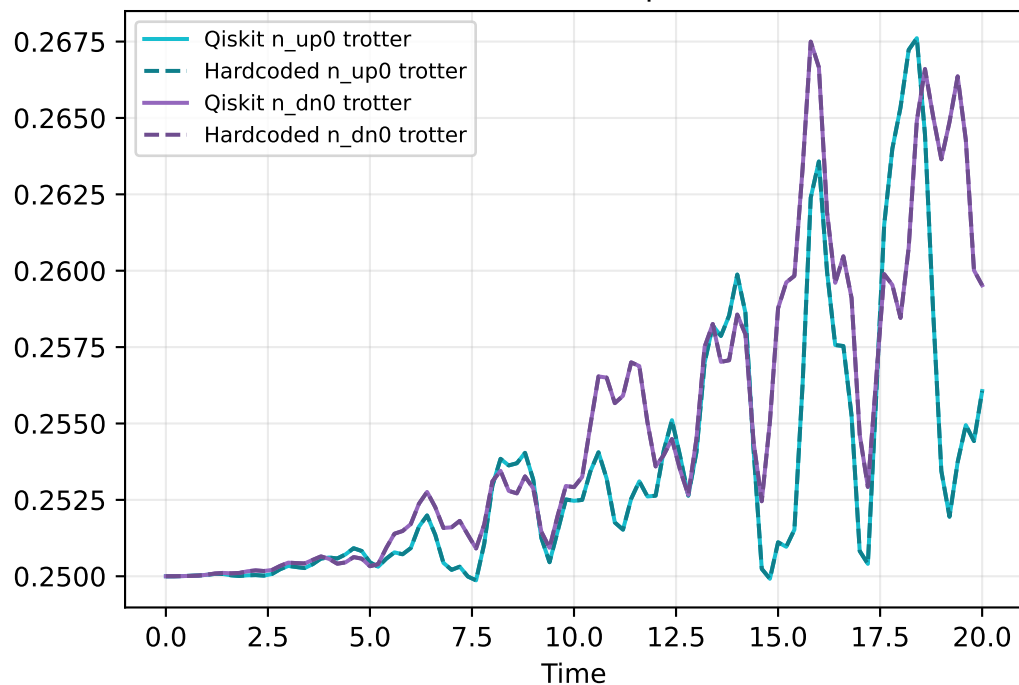
L=4 Fidelity



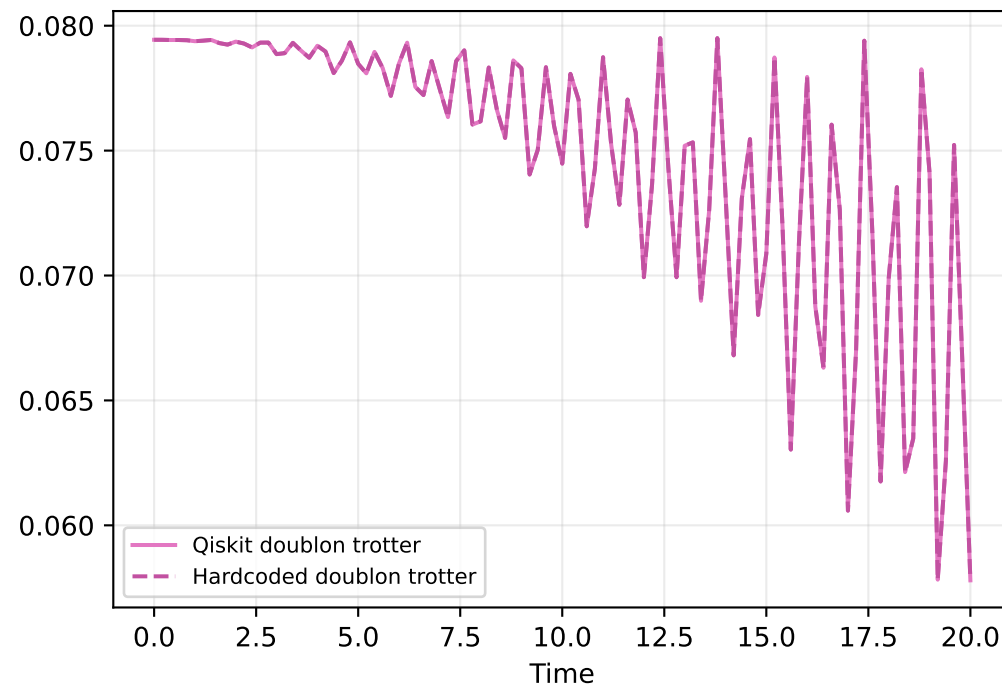
L=4 Energy



L=4 Site-0 Occupations

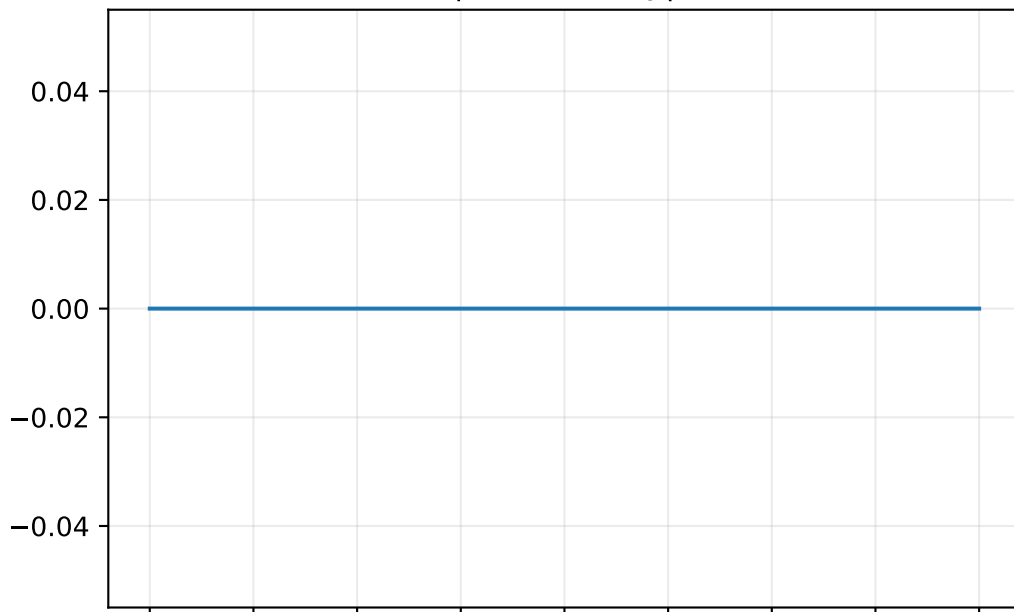


L=4 Doublon

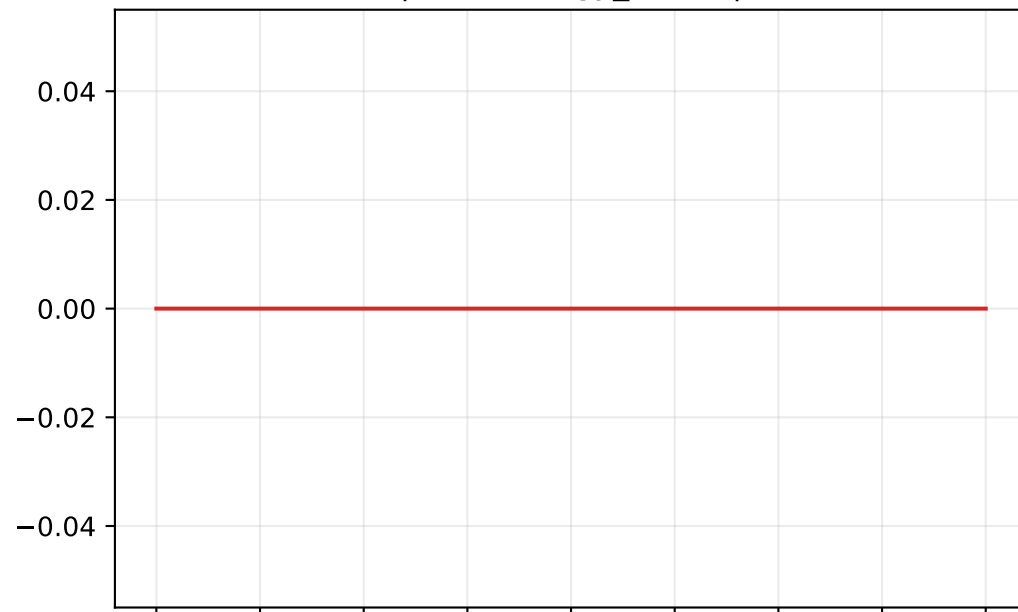


Bundle Delta Diagnostics L=4

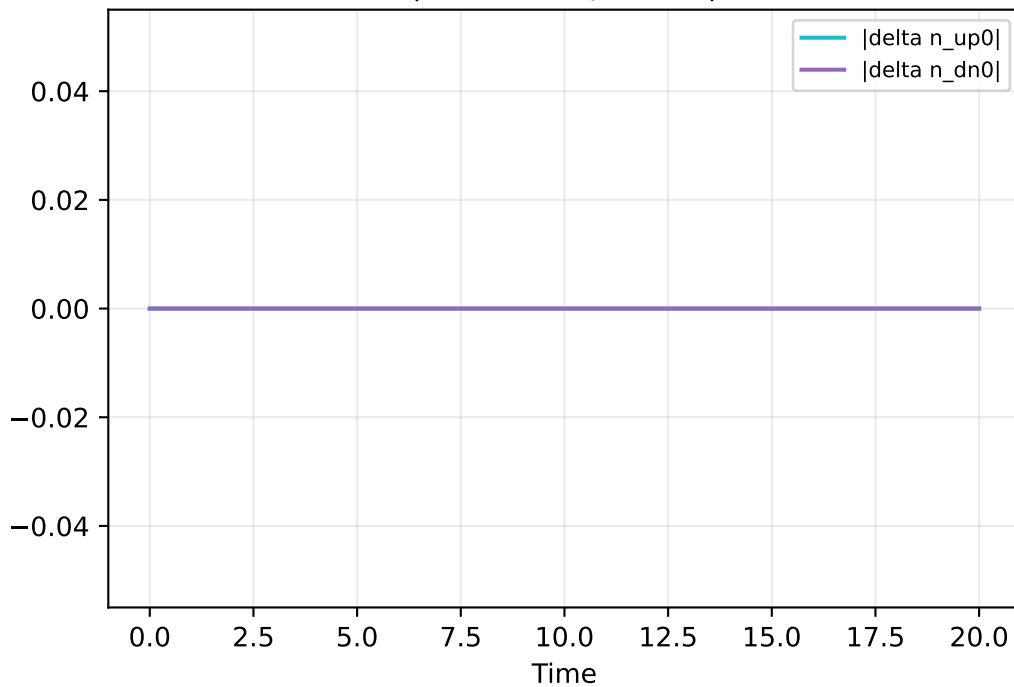
|delta fidelity|



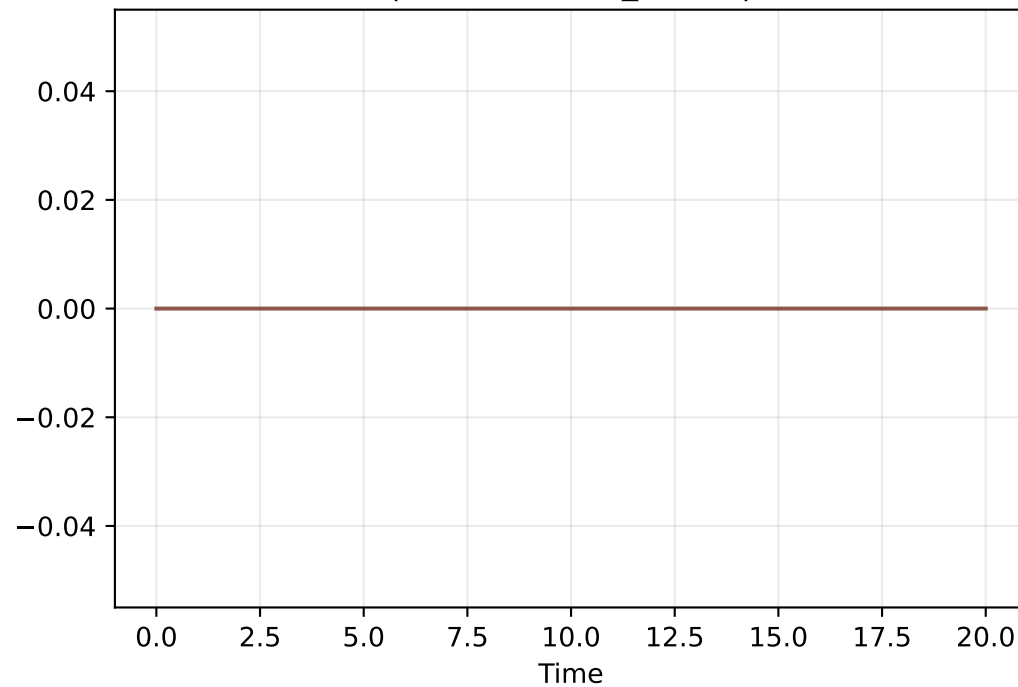
|delta energy_trotter|



|delta occupations|



|delta doublon_trotter|



Bundle metrics page L=4

Trotterization comparison uses each path's configured initial state.
For VQE-init runs, both exact(t) and trotter(t) start from the VQE ansatz state.

```
ground_state_energy_abs_delta = 0.0
fidelity_max/mean/final = 0.0 / 0.0 / 0.0
energy_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_up_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
n_dn_site0_trotter_max/mean/final = 0.0 / 0.0 / 0.0
doublon_trotter_max/mean/final = 0.0 / 0.0 / 0.0
```

```
checks = {'ground_state_energy_abs_delta': True, 'fidelity_max_abs_delta': True, 'energy_trotter_max_abs_delta': True, 'n_up_s
PASS = True
```