

L=3 HVA vs UCCSD vs Qiskit-UCCSD

exact_filtered_energy=-1.2749172176353751

hva_vqe_energy=-1.2749171770448173

hardcoded_uccsd_vqe_energy=-1.2749171580200909

qiskit_uccsd_vqe_energy=-1.2749171651039366

sanity:

exact_filtered_finite=True

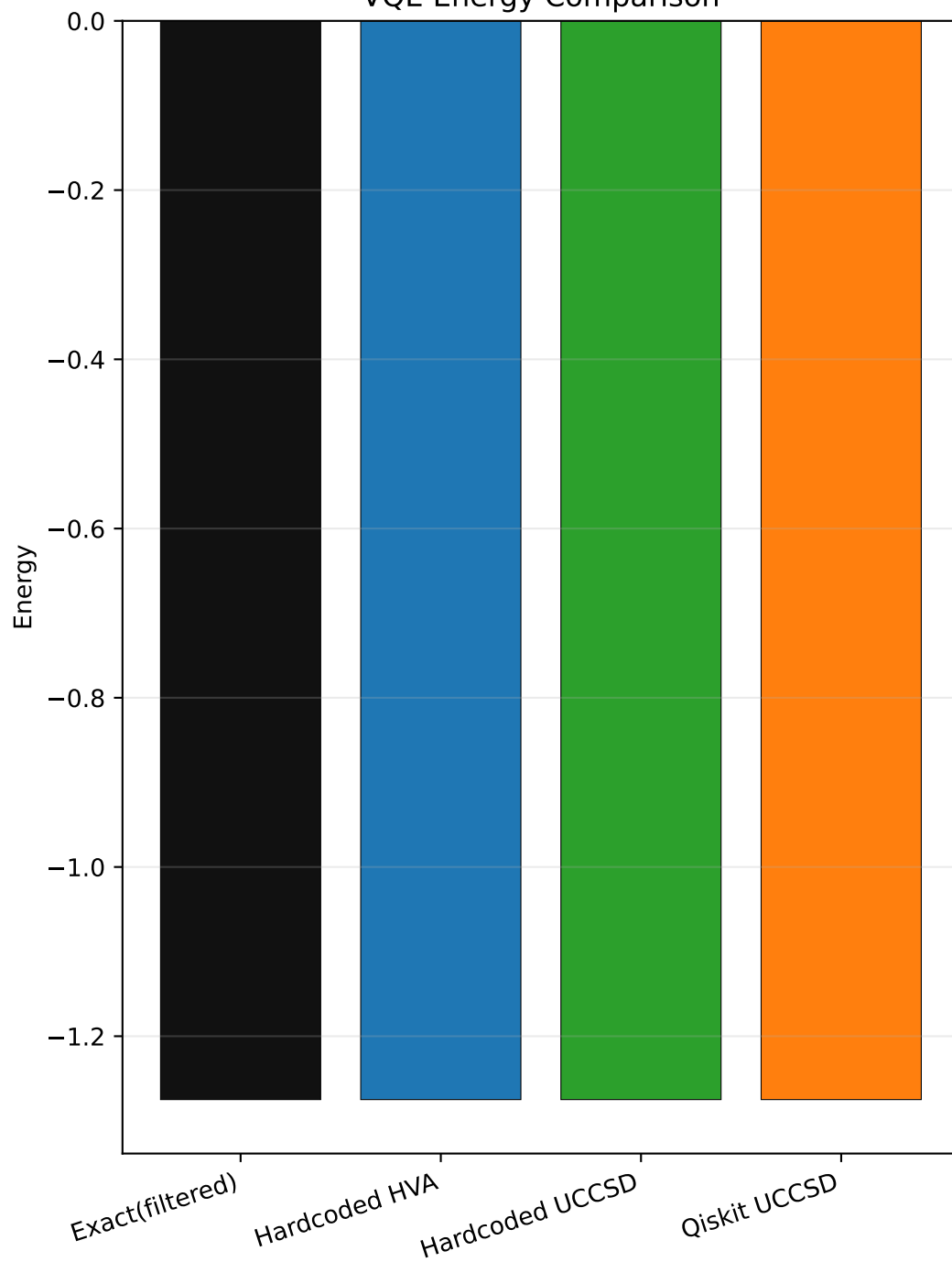
vqe_energy_finite={'hva': True, 'hardcoded_uccsd': True, 'qiskit_uccsd': True}

vqe_energy_ge_exact_filtered_minus_1e-8={'hva': True, 'hardcoded_uccsd': True, 'qiskit_uccsd': True}

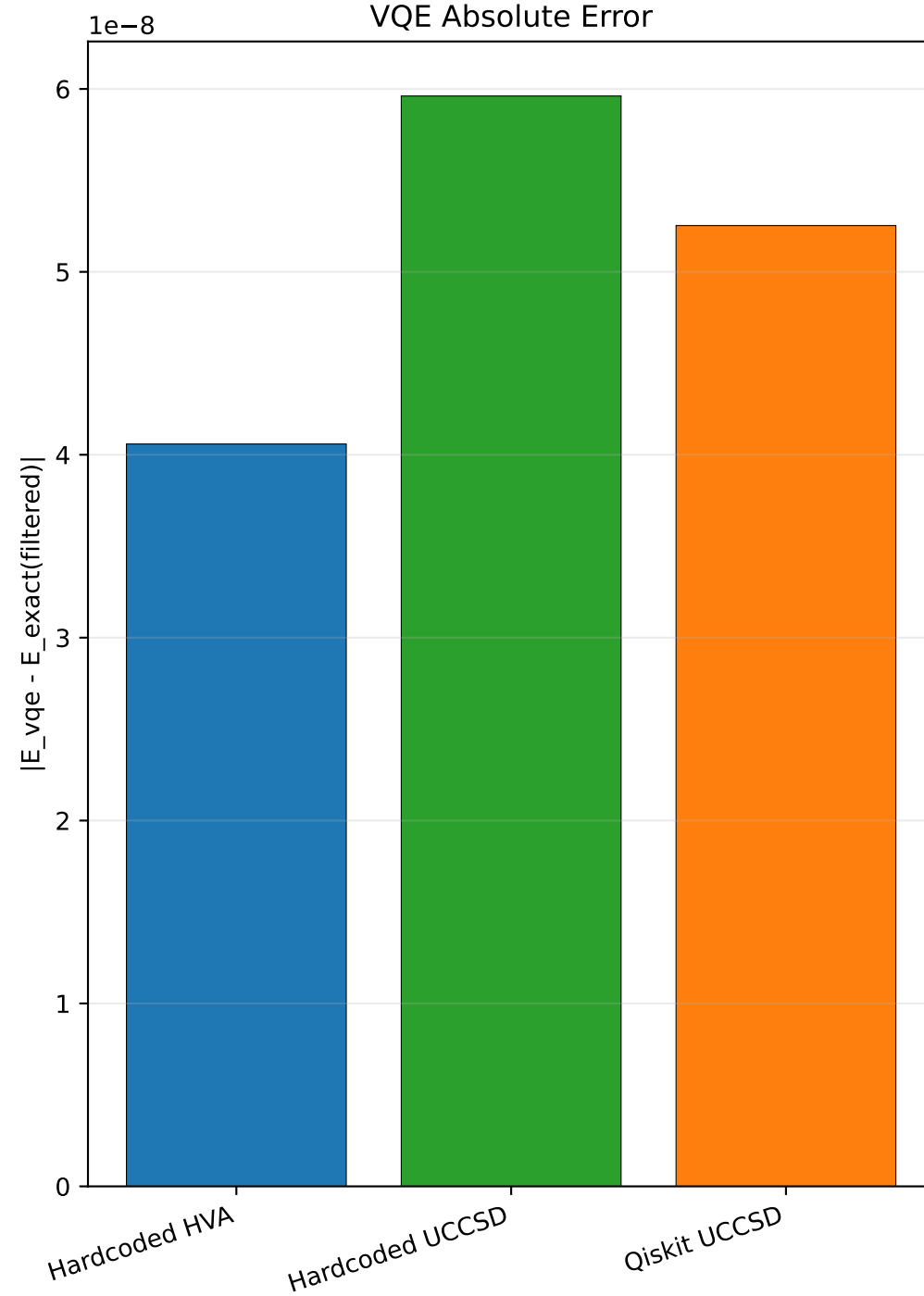
all_pass=True

L=3: Ground-State Comparison

VQE Energy Comparison

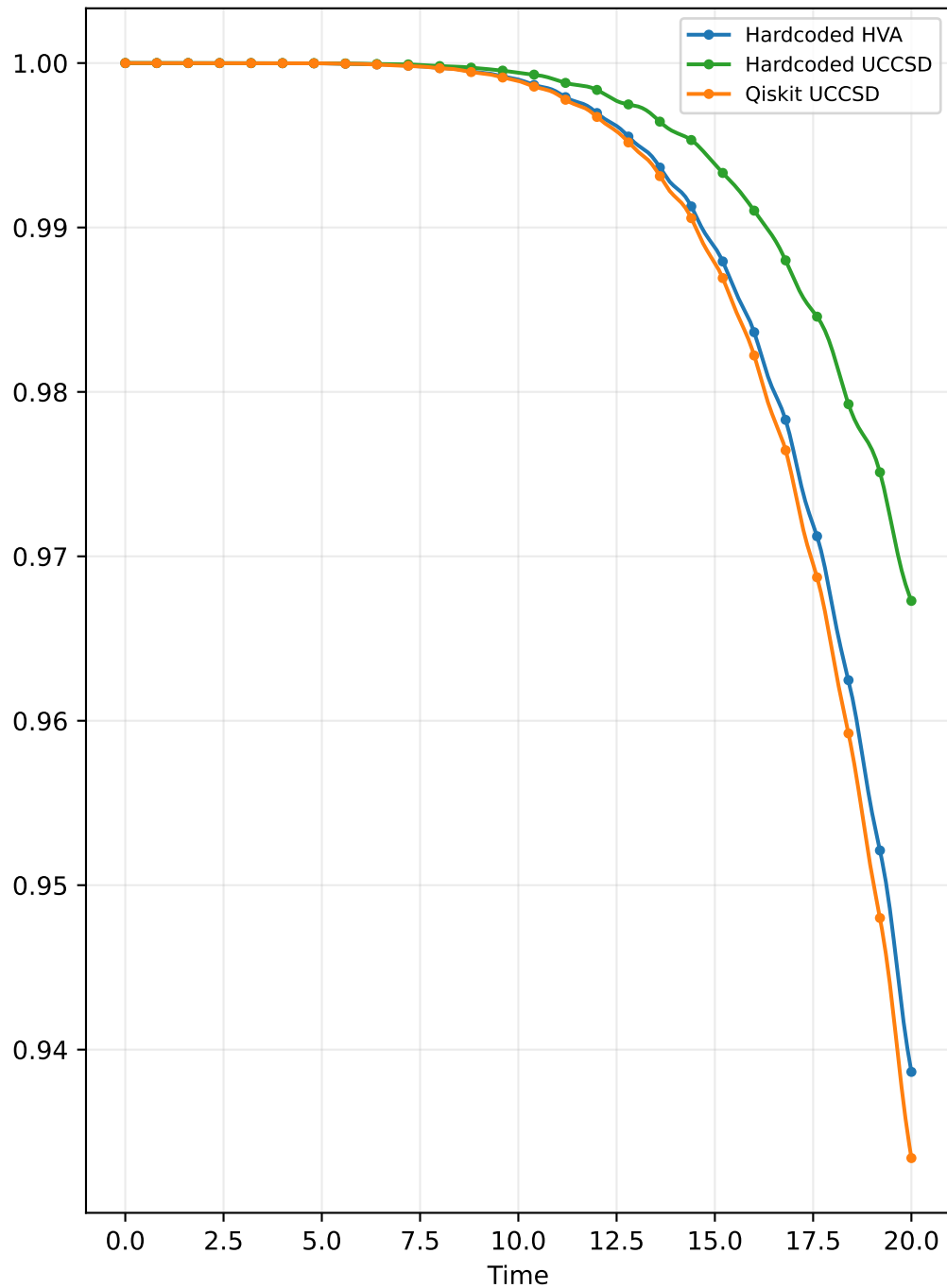


VQE Absolute Error

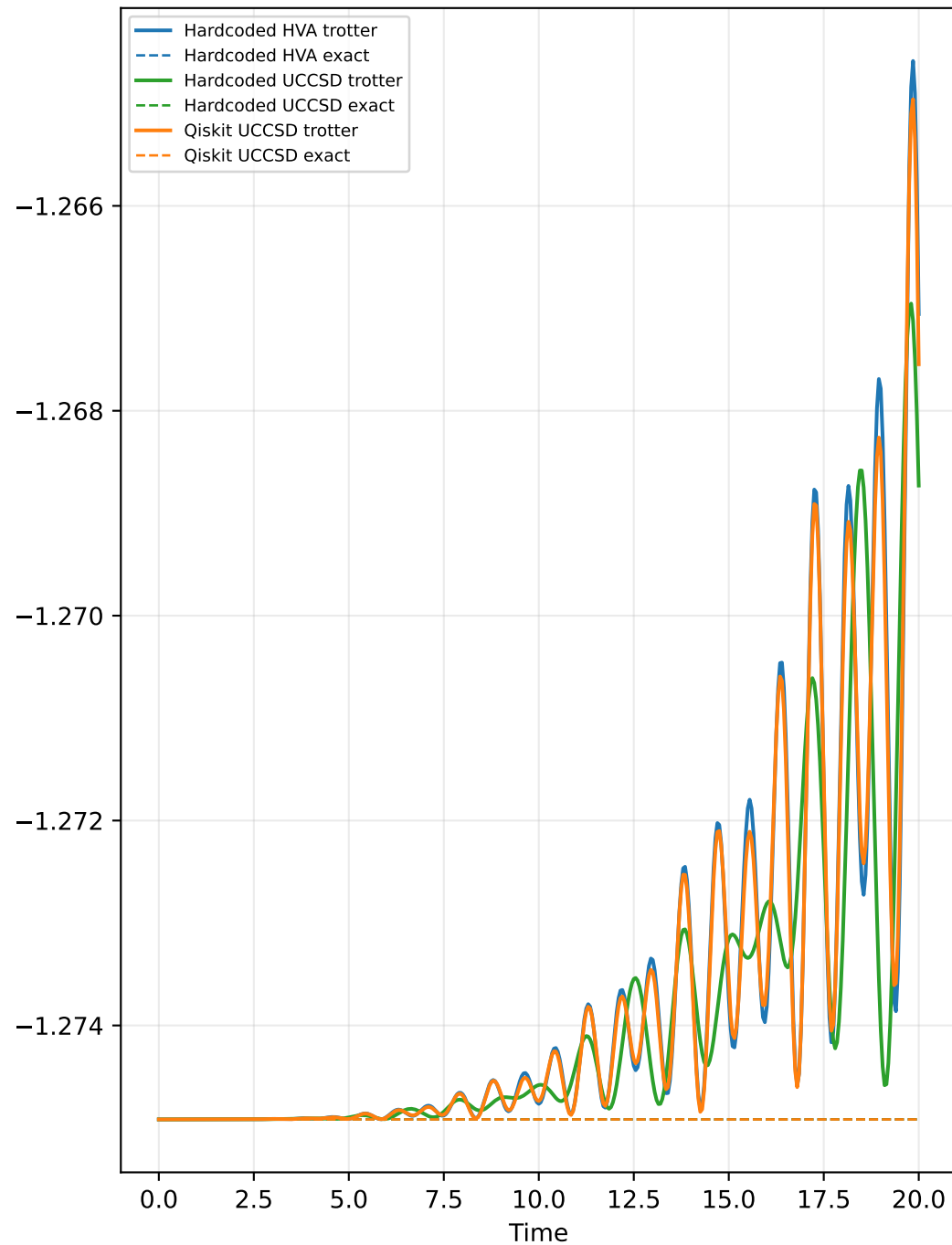


L=3: Dynamics Overview

Fidelity(t)

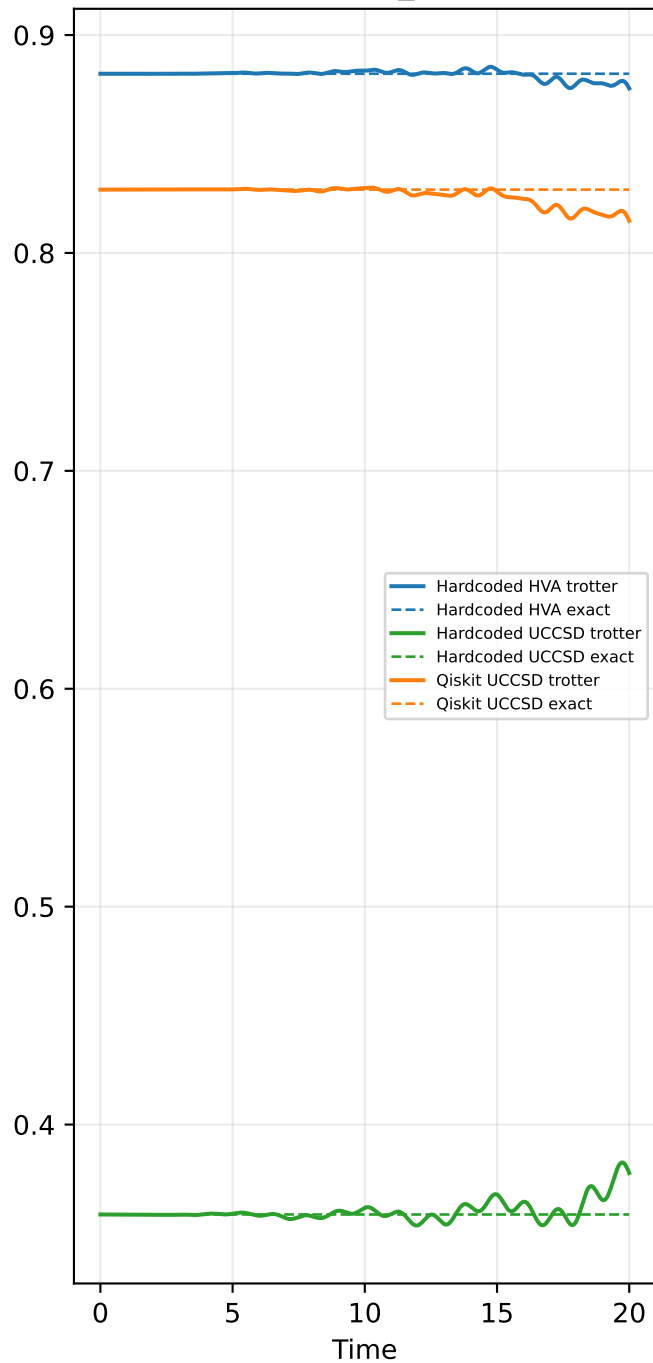


Energy(t): trotter + exact

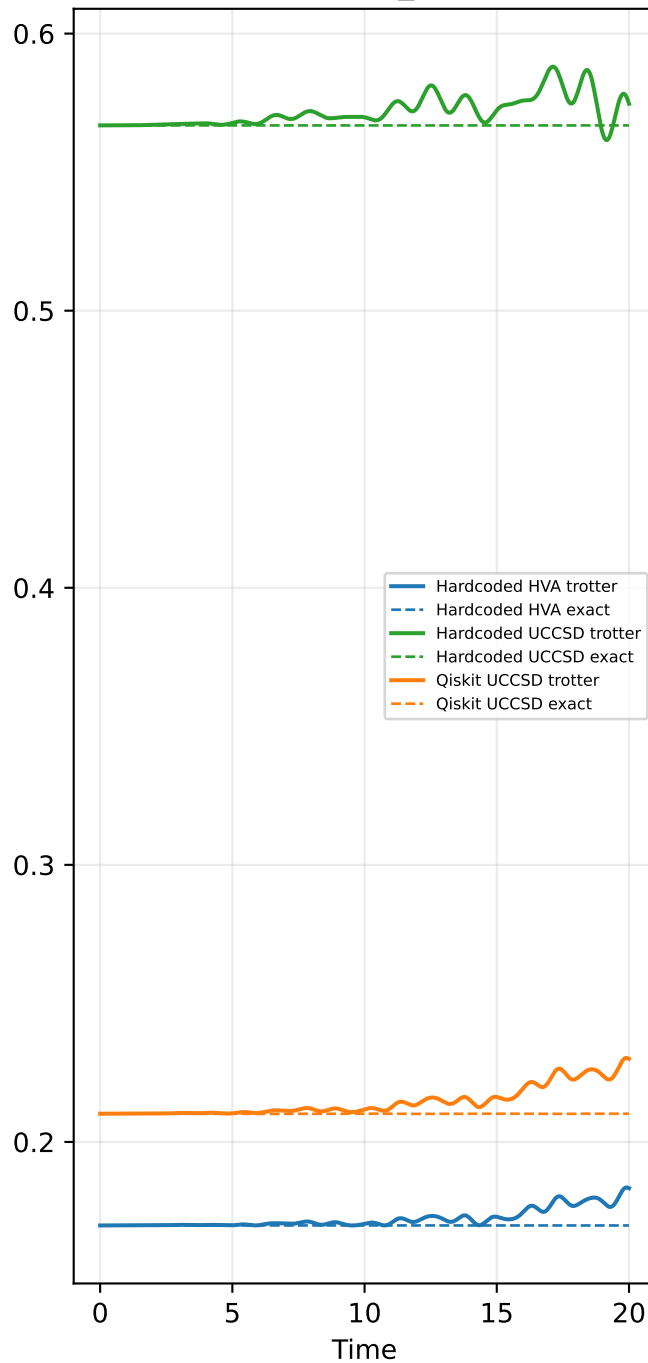


L=3: Occupations & Doublon (trotter vs exact)

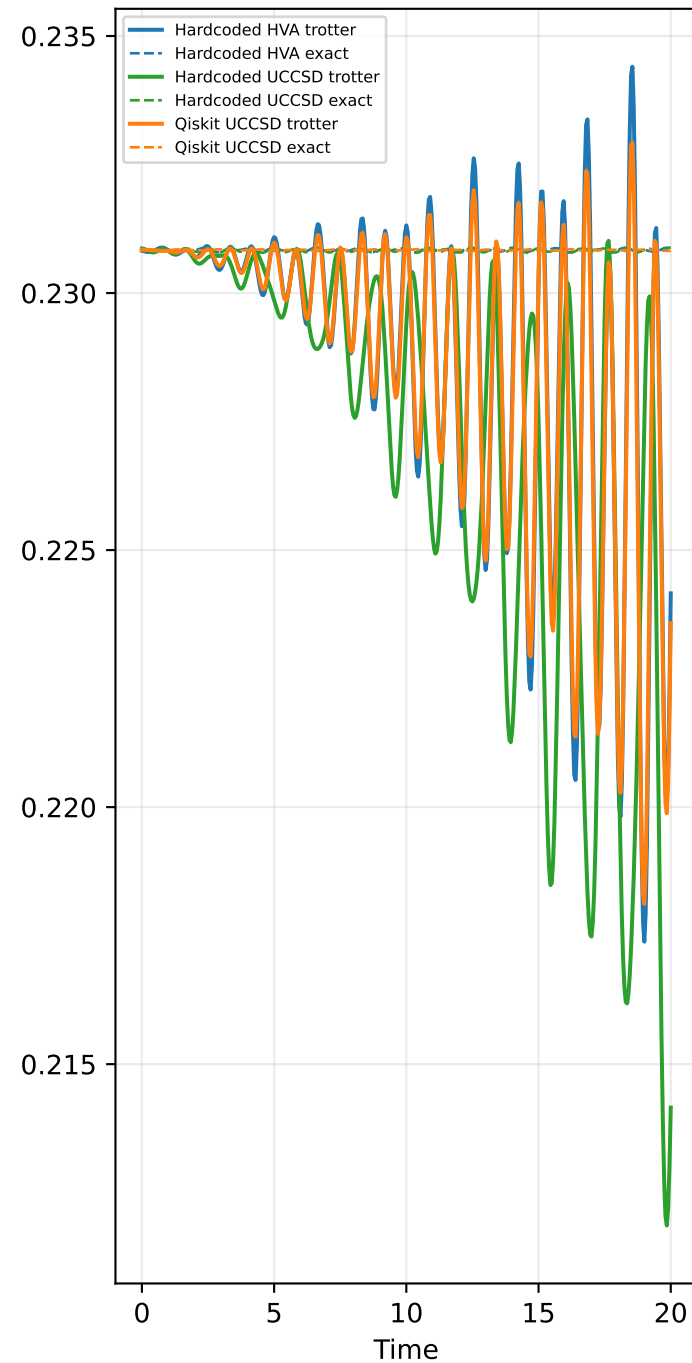
Site-0 n_{up}



Site-0 n_{dn}

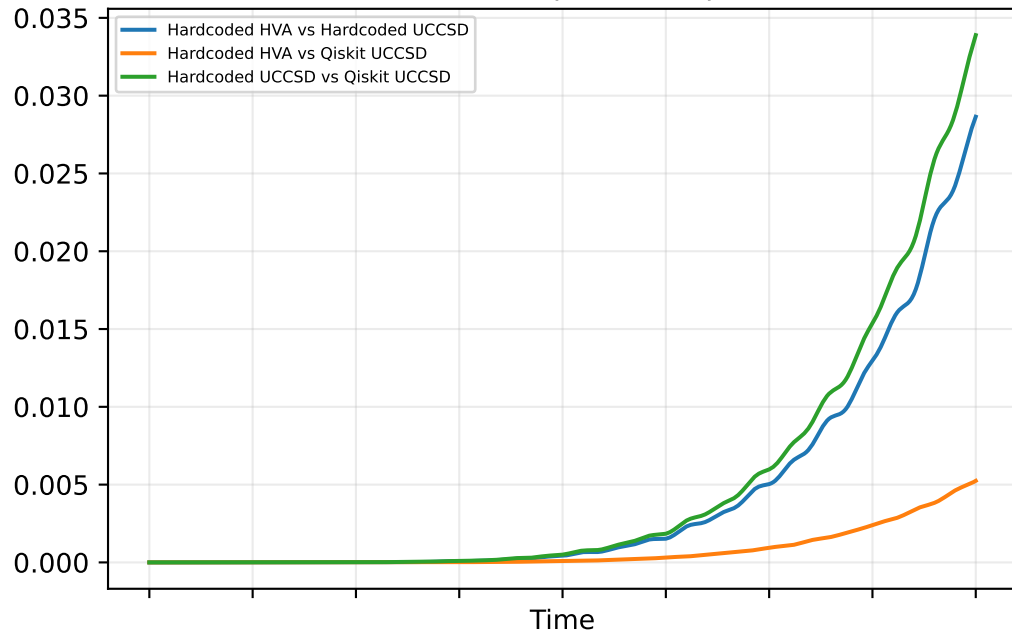


Doublon

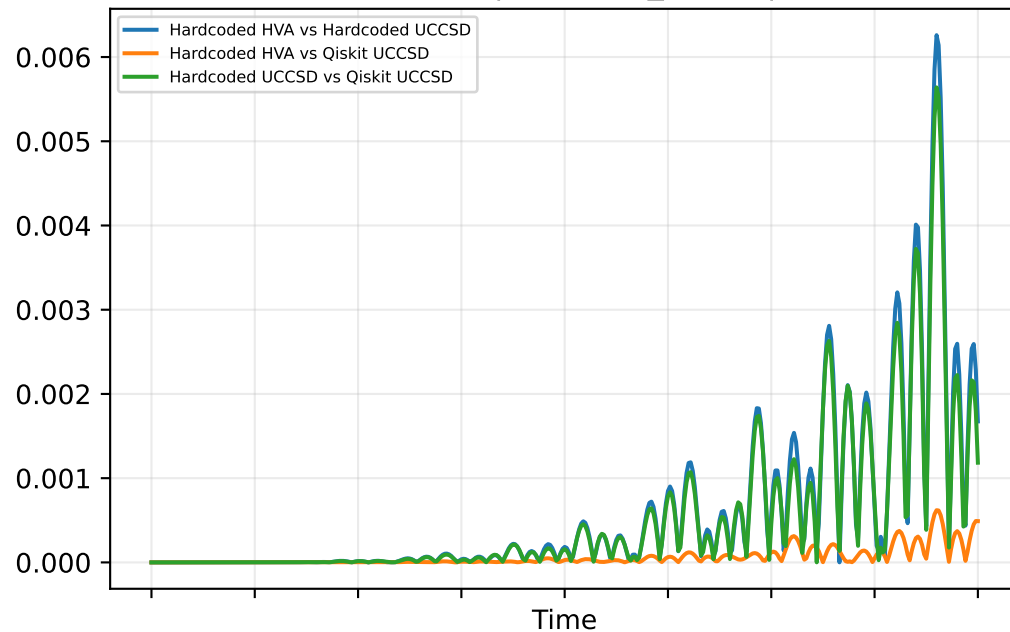


L=3: Pairwise Deltas

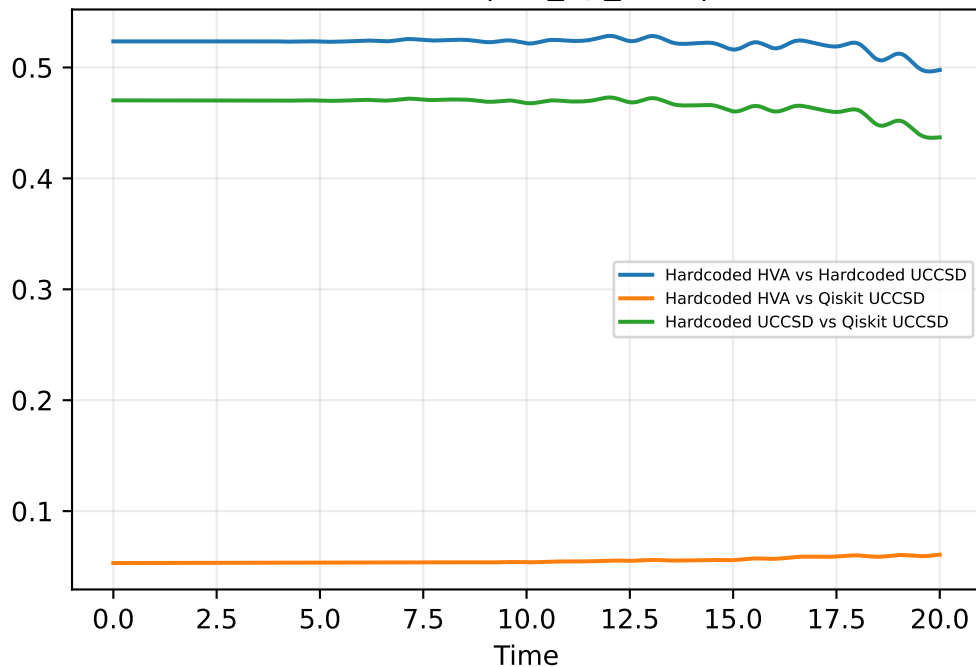
Pairwise $|\Delta \text{fidelity}|$



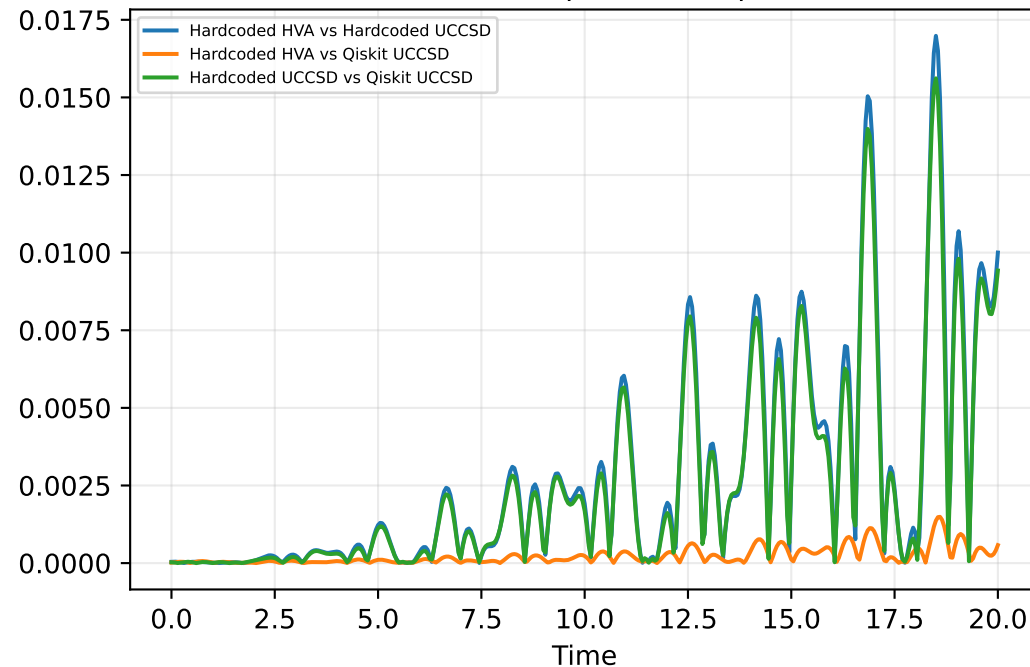
Pairwise $|\Delta \text{energy_trotter}|$



Pairwise $|\Delta n_{\text{up_site0}}|$

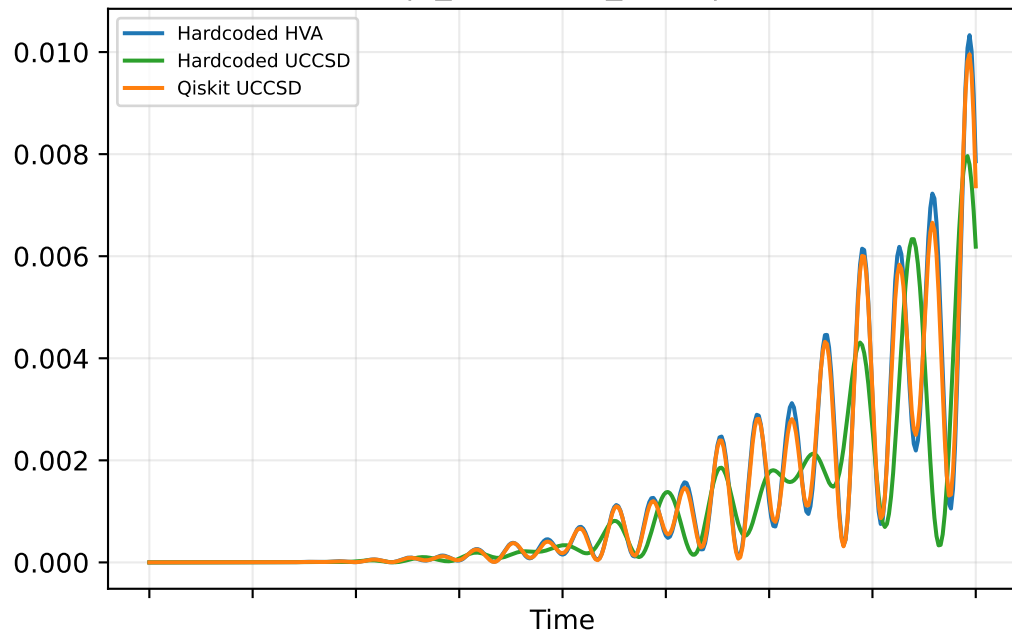


Pairwise $|\Delta \text{doublon}|$

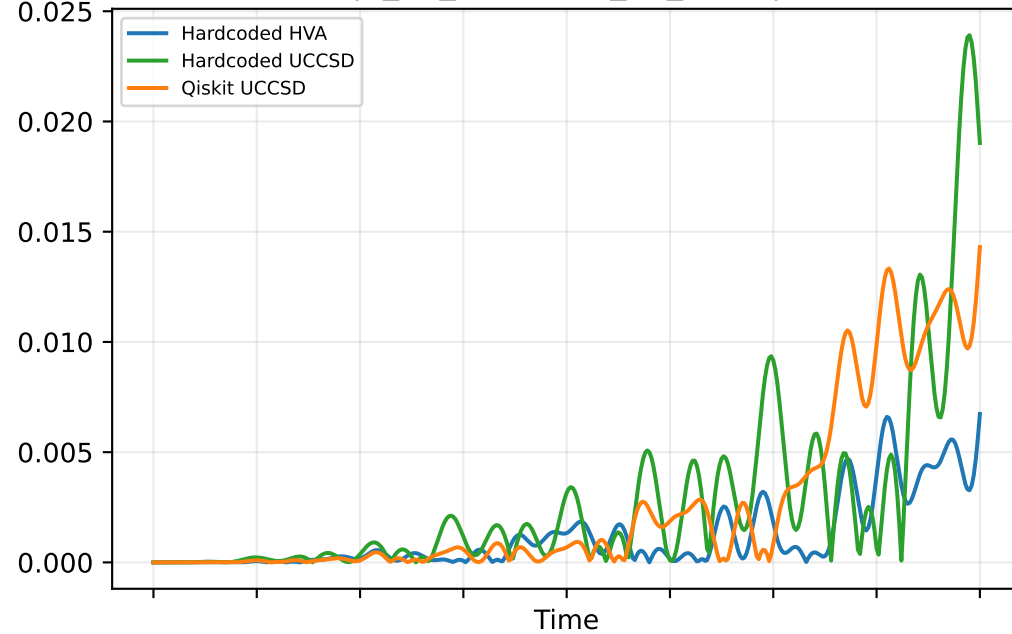


L=3: Per-MethodError vs Exact

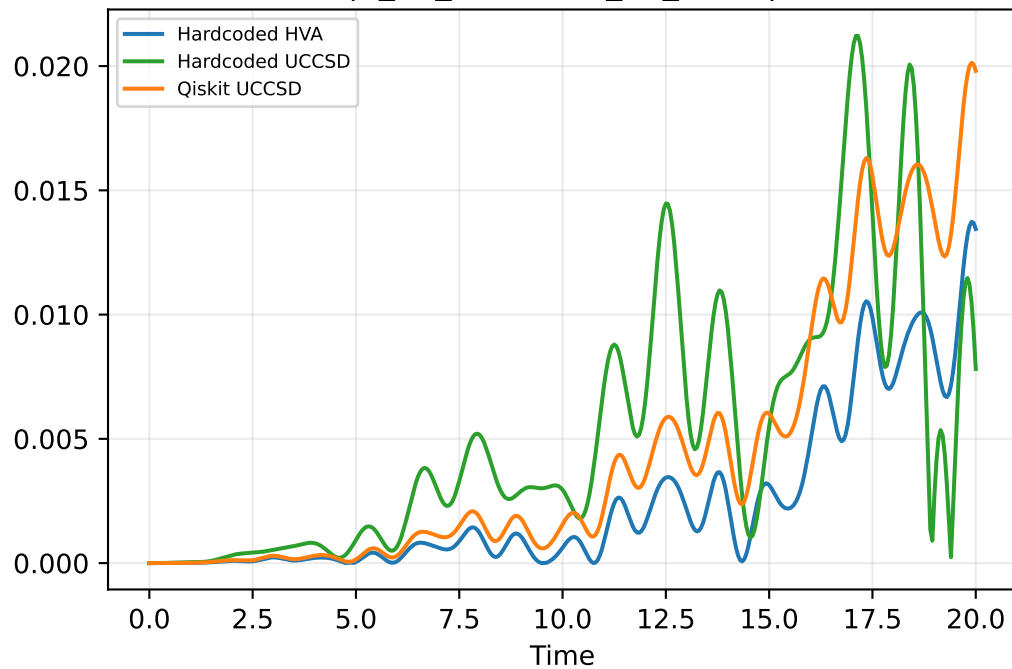
$|E_{\text{trotter}} - E_{\text{exact}}|$



$|n_{\text{up_trotter}} - n_{\text{up_exact}}|$



$|n_{\text{dn_trotter}} - n_{\text{dn_exact}}|$



$|\text{doublon_trotter} - \text{doublon_exact}|$

