Generated (UTC): 2026-02-21T18:56:45.609858+00:00
Sites: [2, 3] | boundary=open | ordering=blocked | seed=7
Caps: per_method=15.00s, adapt_trial=3.00s, adapt_fixed_trial=4.00s
Gates: VQE(L2<=1.0e-08, L3<=1.0e-06) | UCCSD-fixed(L2<=1.0e-08, L3<=1.0e-06) | UCCSD-adapt(L2<=1.0e-07, L3<=1.0e-05) | CSE(gap>=0.90)
Warnings: L=2 adapt_uccsd_fixed: stopped due to budget:max_time_s. | L=2 adapt_uccsd_adapt: stopped due to budget:max_time_s. | L=2 adapt_cse_adapt: stopped due to

PASS/FAIL Matrix (Method x L)

Method	L=2	L=3
Hardcoded VQE (UCCSD)	PASS $|dE|$=7.450e-09 <= 1.000e-08 reason=ok	PASS $|dE|$=6.772e-08 <= 1.000e-06 reason=ok
Qiskit VQE (UCCSD)	PASS $|dE|$=5.600e-10 <= 1.000e-08 reason=ok	PASS $|dE|$=3.795e-08 <= 1.000e-06 reason=ok
ADAPT-UCCSD (Fixed Sequence)	FAIL $|dE|$=8.152e-01 <= 1.000e-08 reason=timeout/cap	FAIL $|dE|$=5.236e+00 <= 1.000e-06 reason=timeout/cap
ADAPT-UCCSD (Adaptive)	FAIL $|dE|$=3.281e-01 <= 1.000e-07 reason=timeout/cap	FAIL $|dE|$=4.236e+00 <= 1.000e-05 reason=timeout/cap
ADAPT-CSE (Adaptive)	PASS gap=0.938 >= 0.90 reason=timeout/cap	FAIL gap=0.191 >= 0.90 reason=timeout/cap

L=2 Best Results

Method	E_best	$|dE|$	gap	Runtime(	Gate	Reason
Exact (6.83	3605711	0.000e+0	NA	0.00	PASS	reference
Hartree 4.50	0000006	336e+0	0.000	0.00	PASS	reference
ded VQE (8.83	3605711	7.450e-0	1.000	0.30	PASS	ok
t VQE (8.83	3605711	5.600e-1	1.000	4.65	PASS	ok
CSD (6.02	2082126	8.152e-0	0.847	6.89	FAIL	timeout
UCCSD (5.50	0793653	3.281e-0	0.939	8.16	FAIL	timeout/ca
-CSE (6.60	6312973	.297e-0	0.938	5.66	PASS	timeout/cap

L=3 Best Results

Method	E_best	$|dE|$	gap	Runtime(	Gate	Reason
Exact (5.23	3606797	0.000e+0	NA	0.00	PASS	reference
Hartree 4.00	0000006	236e+0	0.000	0.00	PASS	reference
Hardcoded VQE (5.23	3606796	6.772e-0	1.000	19.59	PASS	ok
Qiskit VQE (1.23	3606793	3.795e-0	1.000	84.70	PASS	ok
ADAPT-UCCSD (Fi 0.00	0000006	236e+0	0.000	5.91	FAIL	timeout/cap
ADAPT-UCCSD 0.00	0000004	236e+0	0.191	3.30	FAIL	timeout/cap
ADAPT-CSE (0.00	0000004	236e+0	0.191	3.05	FAIL	timeout/cap

L	Method	E_best	|dE|	gap	Runtime(s)	Gate	Reason
L=2	Hardcoded VQE (UCCSD)	-0.836057110705	7.450e-09	1.000	0.30	PASS	ok
L=2	Qiskit VQE (UCCSD)	-0.836057117595	5.600e-10	1.000	4.65	PASS	ok
L=2	ADAPT-UCCSD (Fixed Sequen	-0.020821263064	8.152e-01	0.847	6.89	FAIL	timeout/cap
L=2	ADAPT-UCCSD (Adaptive)	-0.507936507935	3.281e-01	0.939	8.16	FAIL	timeout/cap
L=2	ADAPT-CSE (Adaptive)	-0.506312970694	3.297e-01	0.938	5.66	PASS	timeout/cap
L=3	Hardcoded VQE (UCCSD)	-1.236067909782	6.772e-08	1.000	19.59	PASS	ok
L=3	Qiskit VQE (UCCSD)	-1.236067939546	3.795e-08	1.000	84.70	PASS	ok
L=3	ADAPT-UCCSD (Fixed Sequen	4.000000000000	5.236e+00	0.000	5.91	FAIL	timeout/cap
L=3	ADAPT-UCCSD (Adaptive)	3.000000000000	4.236e+00	0.191	3.30	FAIL	timeout/cap
L=3	ADAPT-CSE (Adaptive)	3.000000000000	4.236e+00	0.191	3.05	FAIL	timeout/cap

Correctness Plot: Absolute Error vs Exact

Runtime by Method (All Scales)

Runtime Zoom (small runtimes visible)

Energy Overview (Table Companion)
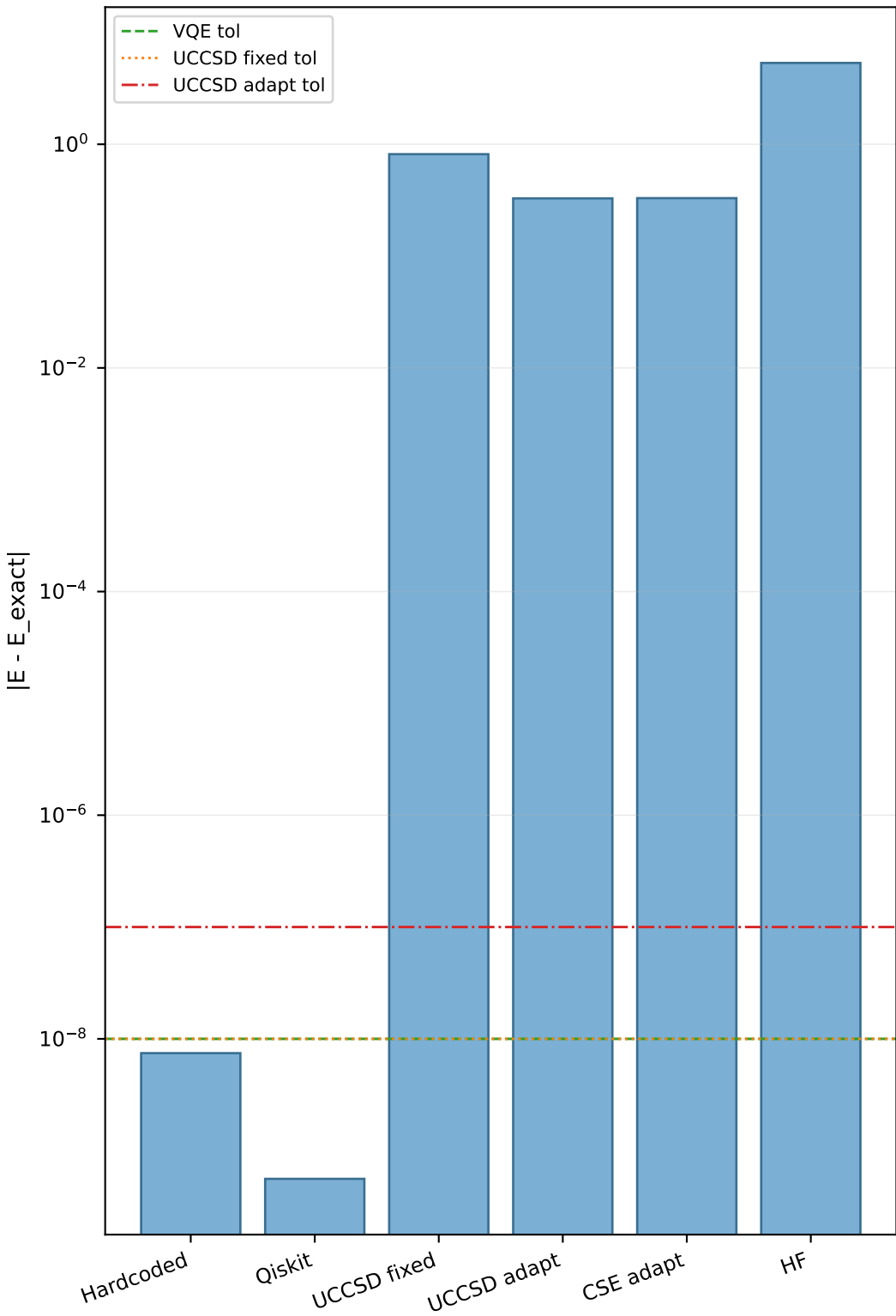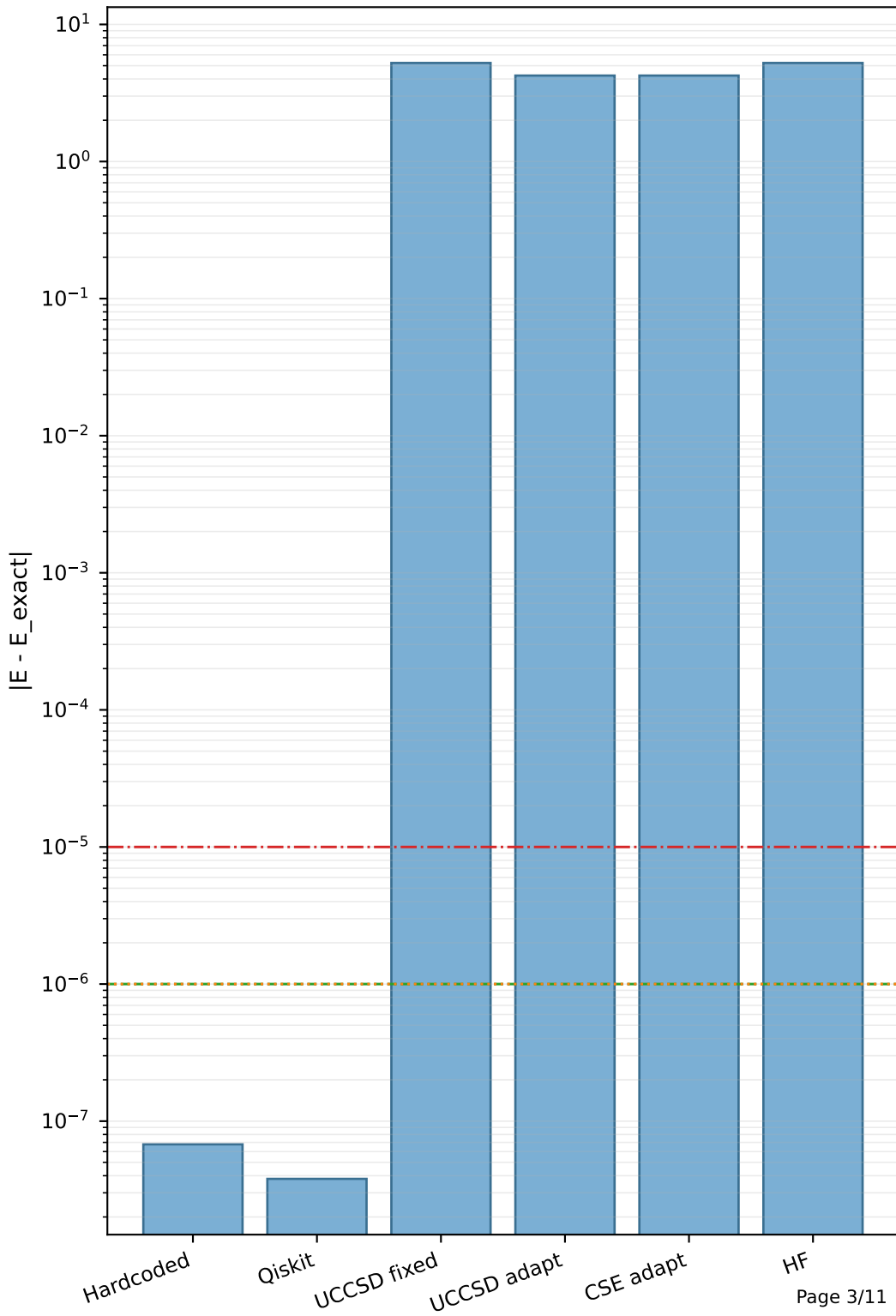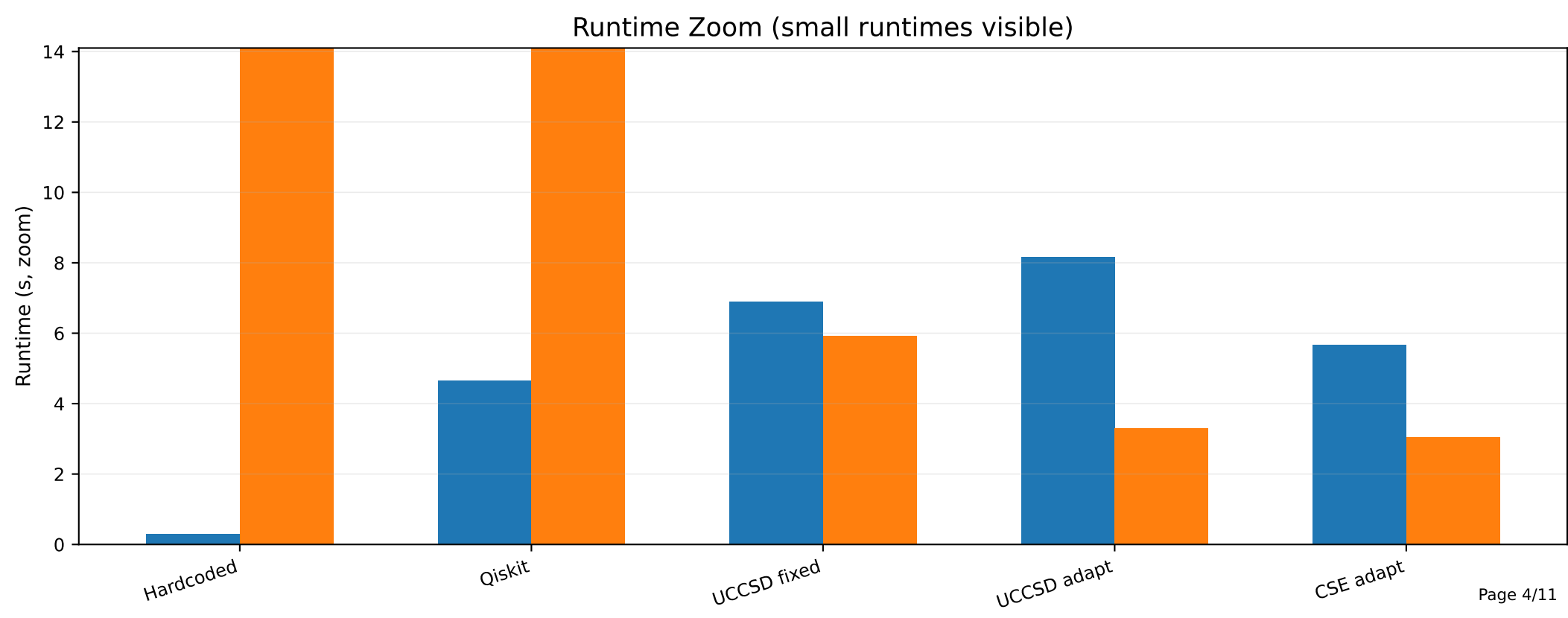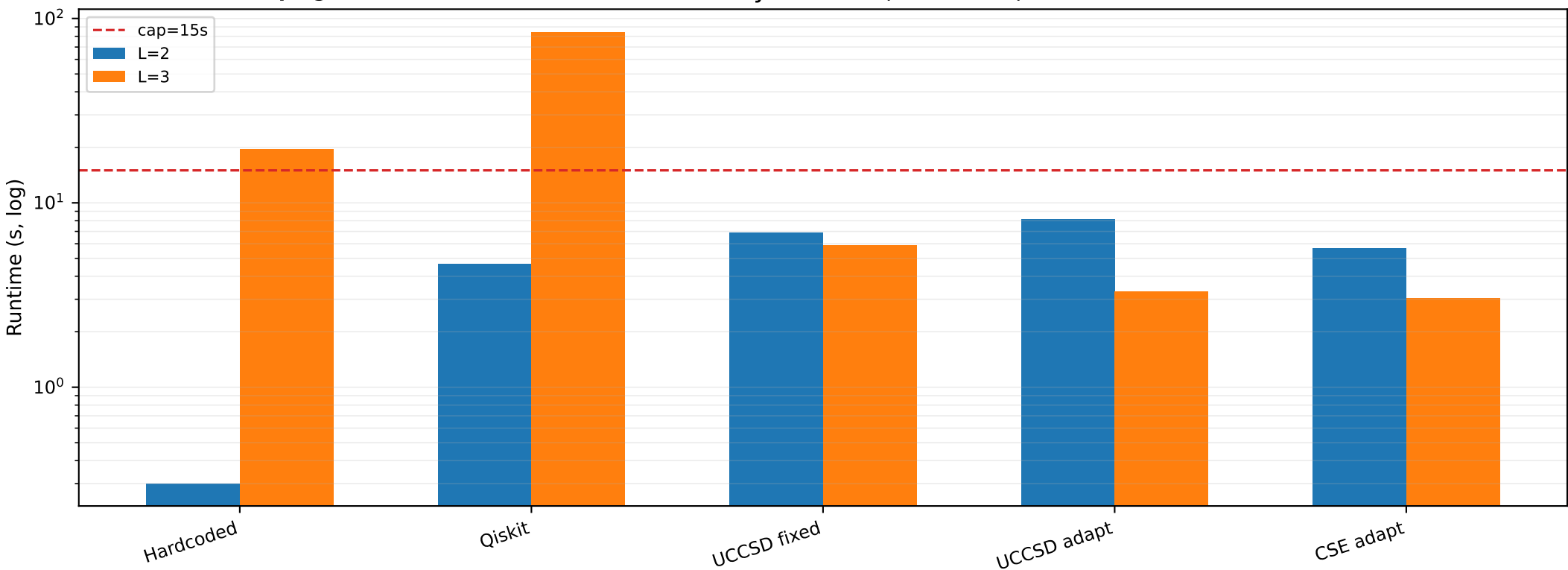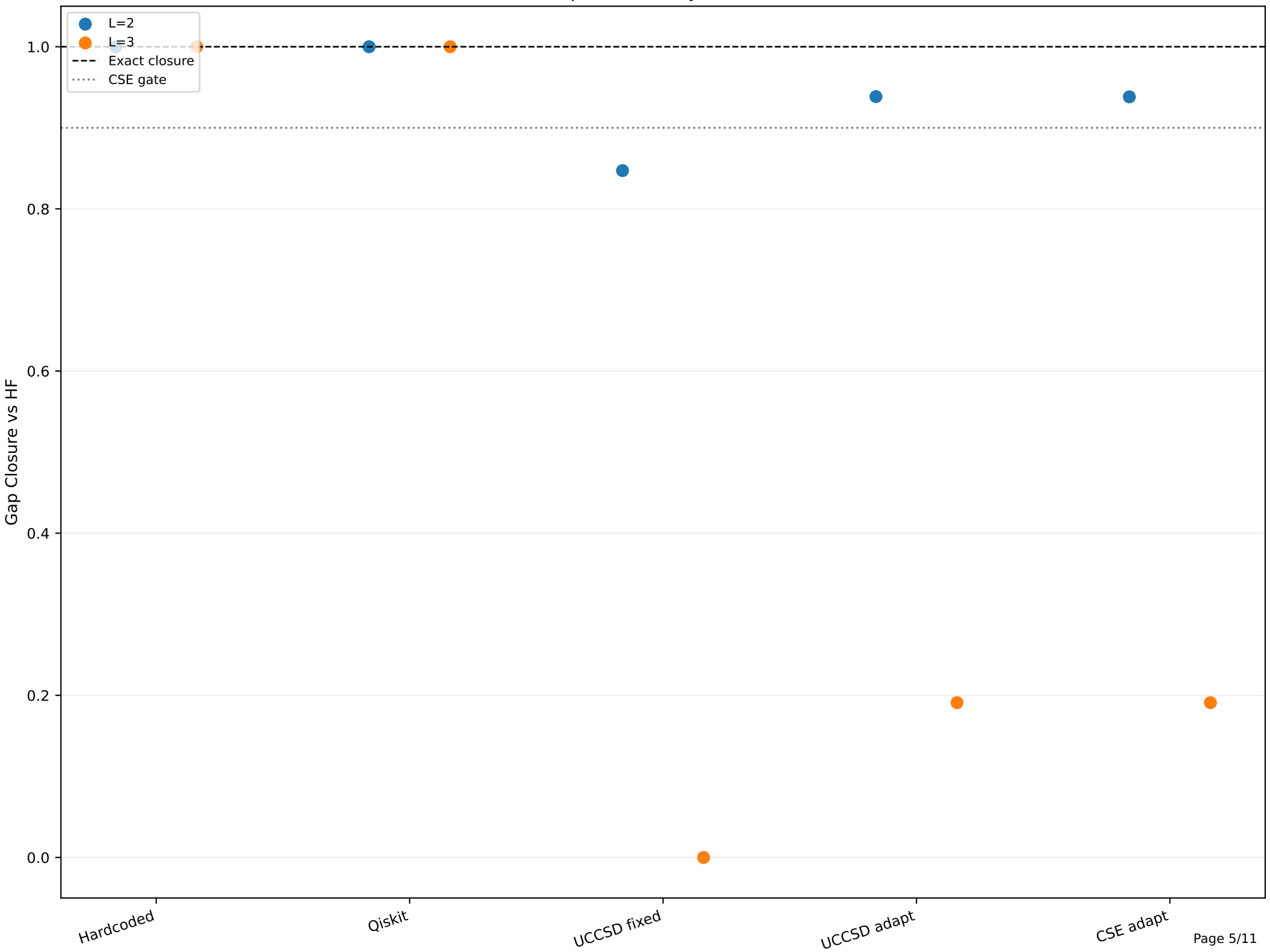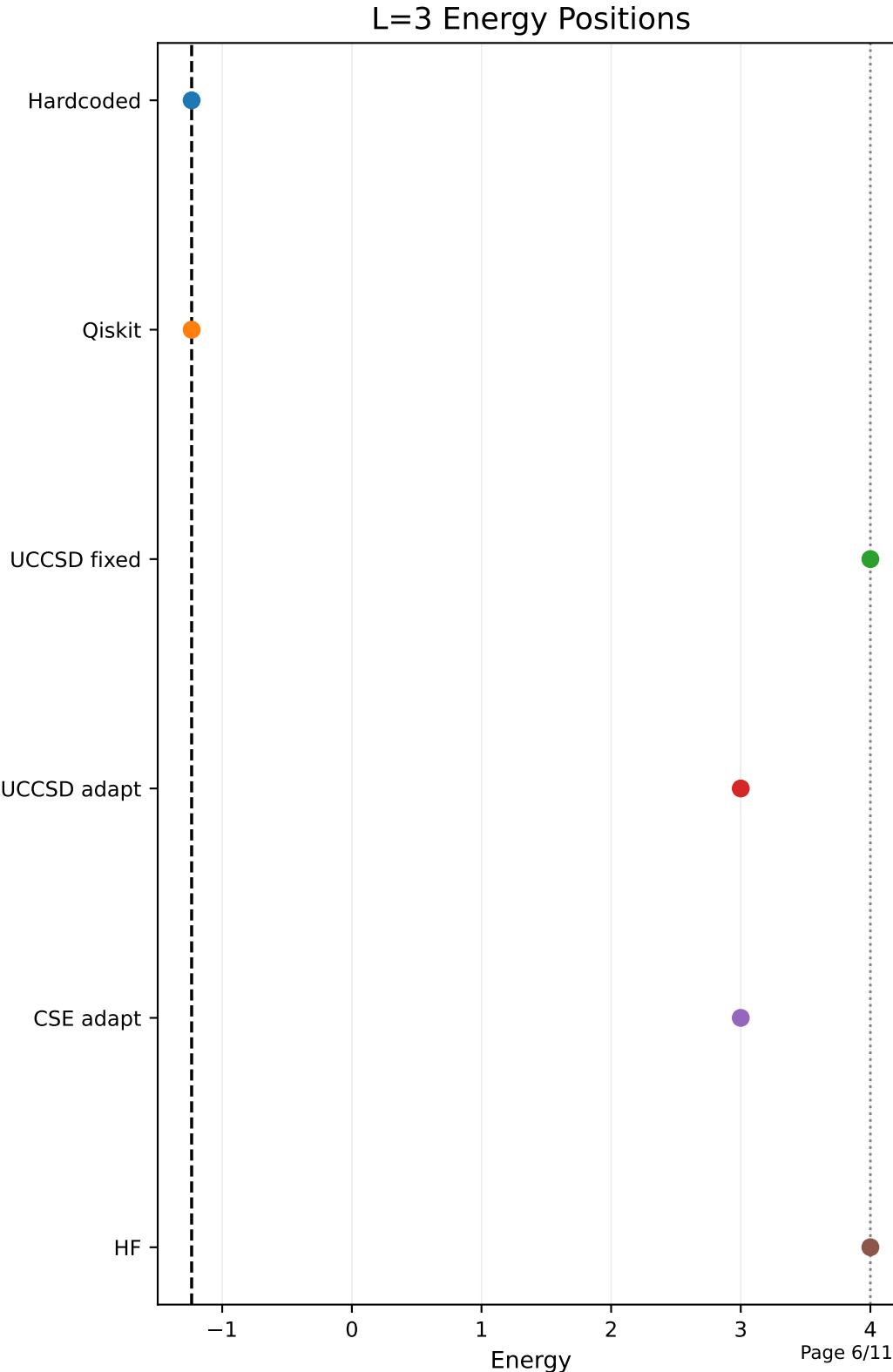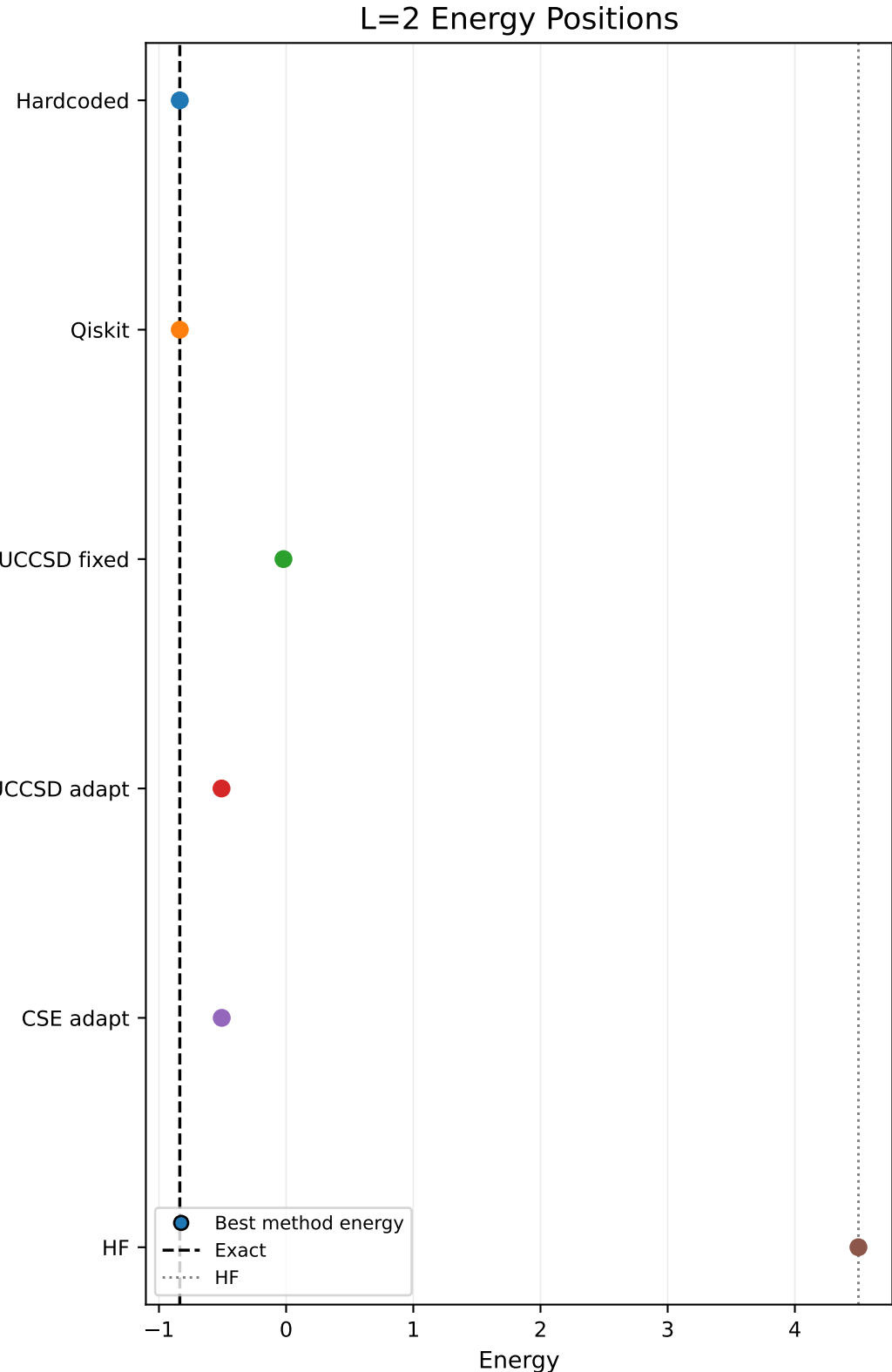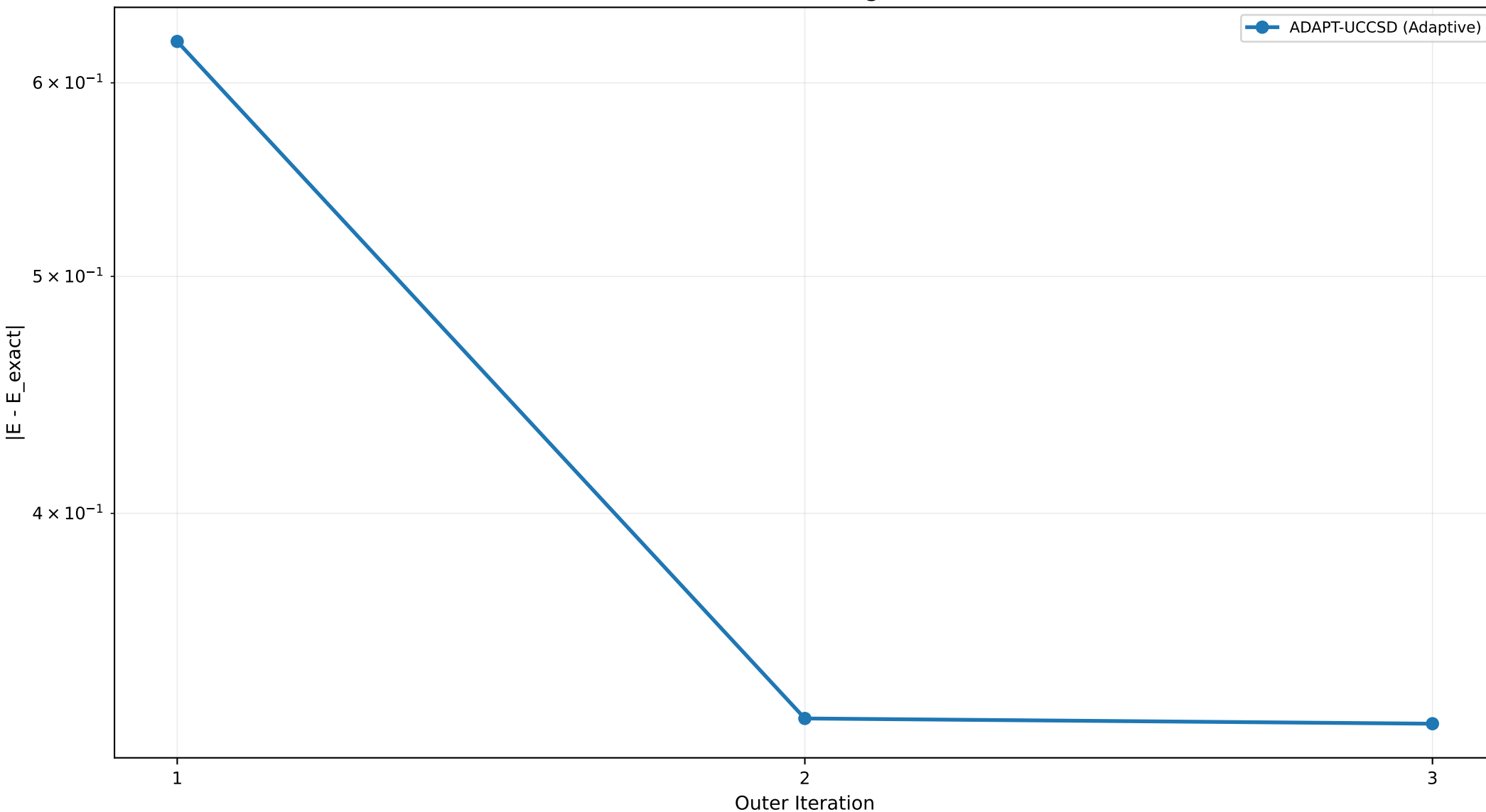
Method	N_iter	Final |dE|	Runtime(s)	Stop/Note
ADAPT-UCCSD (Fixed Sequence)	1	8.152e-01	6.89	stopped after 1 iteration; stop=budget:max_
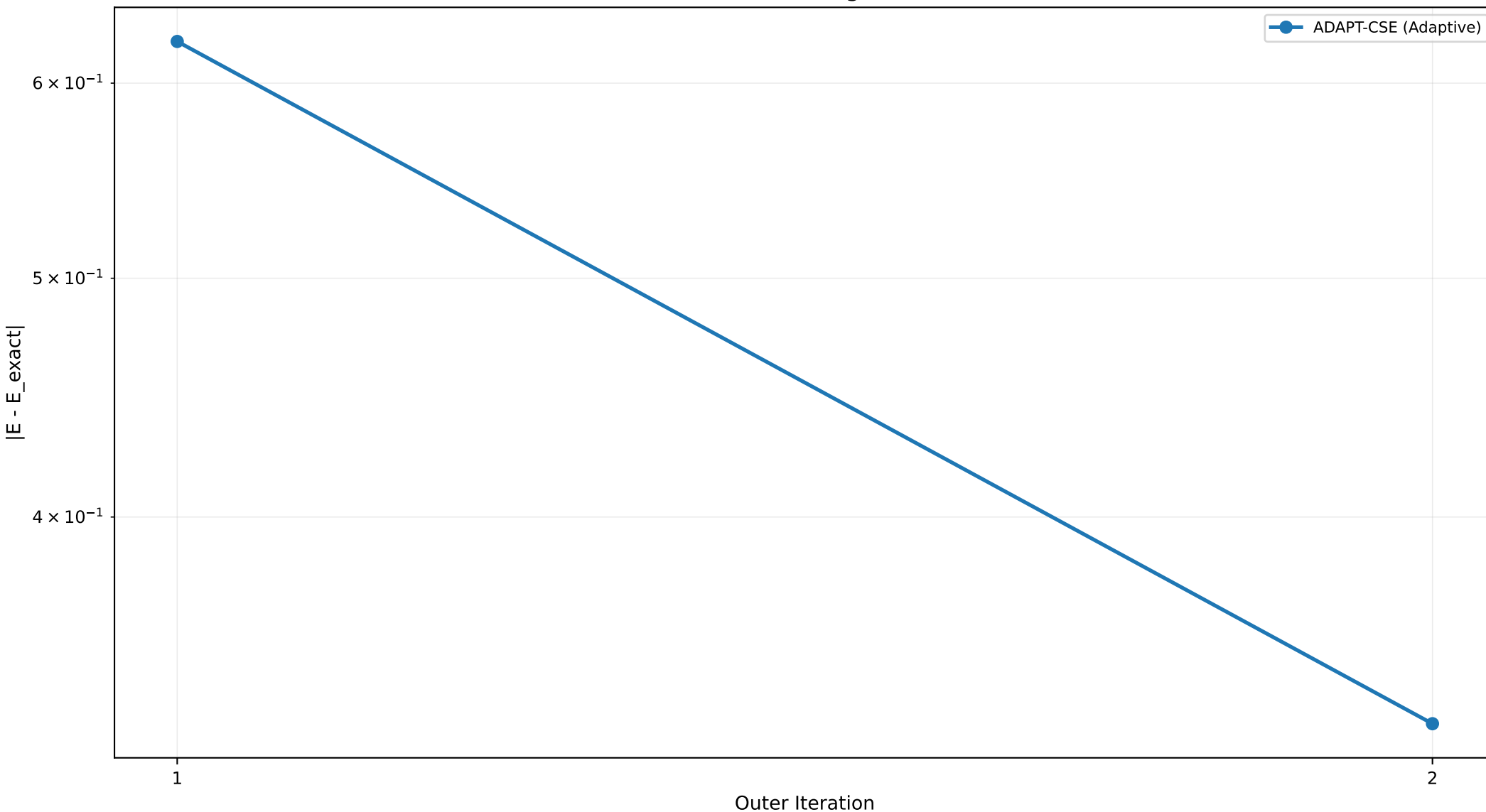
Method	N_iter	Final |dE|	Runtime(s)	Stop/Note
ADAPT-CSE (Adaptive)	2	3.297e-01	5.66	stop=budget:max_time_s

No multi-iteration UCCSD convergence traces.

Method	N_iter	Final |dE|	Runtime(s)	Stop/Note
ADAPT-UCCSD (Adaptive)	1	4.236e+00	3.30	stopped after 1 iteration; stop=budget:max_ti
ADAPT-UCCSD (Fixed Sequence)	1	5.236e+00	5.91	stopped after 1 iteration; stop=budget:max_ti

No multi-iteration CSE convergence trace.

Method	N_iter	Final |dE|	Runtime(s)	Stop/Note
ADAPT-CSE (Adaptive)	1	4.236e+00	3.05	stopped after 1 iteration; stop=budget:max_ti

L	Method	E_best	|dE|	gap	Runtime(s)
L=2	Hardcoded	-0.836057110705	7.450e-09	1.000	0.30
L=2	Qiskit	-0.836057117595	5.600e-10	1.000	4.65
L=2	UCCSD fixed	-0.020821263064	8.152e-01	0.847	6.89
L=2	UCCSD adapt	-0.507936507935	3.281e-01	0.939	8.16
L=2	CSE adapt	-0.506312970694	3.297e-01	0.938	5.66
L=3	Hardcoded	-1.236067909782	6.772e-08	1.000	19.59
L=3	Qiskit	-1.236067939546	3.795e-08	1.000	84.70
L=3	UCCSD fixed	4.000000000000	5.236e+00	0.000	5.91
L=3	UCCSD adapt	3.000000000000	4.236e+00	0.191	3.30
L=3	CSE adapt	3.000000000000	4.236e+00	0.191	3.05

Appendix: Warnings

- L=2 adapt_uccsd_fixed: stopped due to budget:max_time_s.
- L=2 adapt_uccsd_adapt: stopped due to budget:max_time_s.
- L=2 adapt_cse_adapt: stopped due to budget:max_time_s.
- L=3 hardcoded_vqe: best runtime 19.59s exceeds cap 15.00s.
- L=3 qiskit_vqe: best runtime 84.70s exceeds cap 15.00s.
- L=3 adapt_uccsd_fixed: stopped due to budget:max_time_s.
- L=3 adapt_uccsd_adapt: stopped due to budget:max_time_s.
- L=3 adapt_cse_adapt: stopped due to budget:max_time_s.