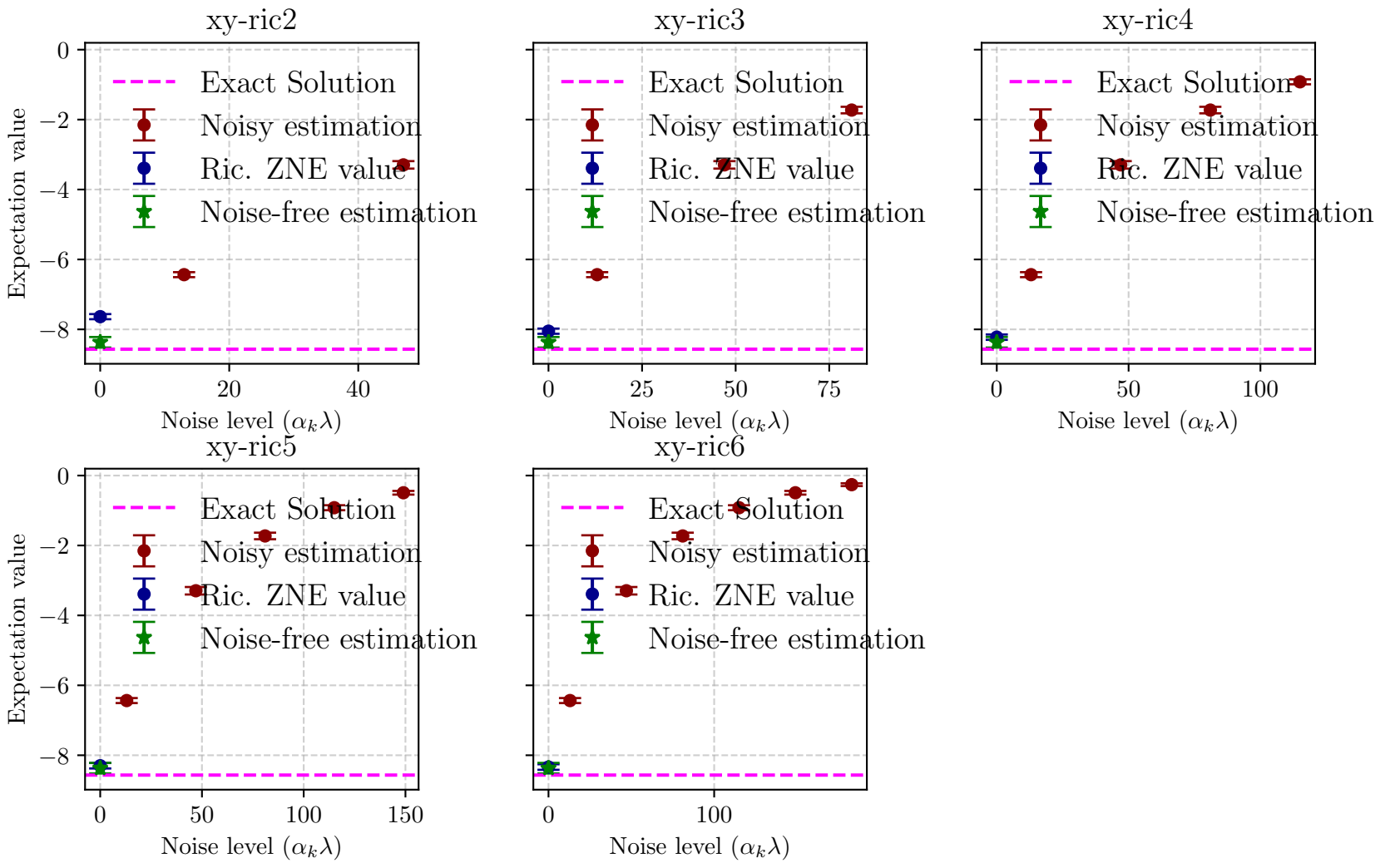
Description	Simulation	Mean ± Std
xy-ric2	vqe	-6.43550 ± 0.07145
xy-ric2	redundant (noise=13)	-6.43550 ± 0.07145
xy-ric2	redundant (noise=47)	-3.29514 ± 0.10699
xy-ric2	zne	-7.63623 ± 0.07321
xy-ric2	noiseoff	-8.36934 ± 0.15125
xy-ric3	vqe	-6.43550 ± 0.07145
xy-ric3	redundant (noise=13)	-6.43550 ± 0.07145
xy-ric3	redundant (noise=47)	-3.29514 ± 0.10699
xy-ric3	redundant (noise=81)	-1.72787 ± 0.09369
xy-ric3	zne	-8.05195 ± 0.07442
xy-ric3	noiseoff	-8.36934 ± 0.15125
xy-ric4	vqe	-6.43550 ± 0.07145
xy-ric4	redundant (noise=13)	-6.43550 ± 0.07145
xy-ric4	redundant (noise=47)	-3.29514 ± 0.10699
xy-ric4	redundant (noise=81)	-1.72787 ± 0.09369
xy-ric4	redundant (noise=115)	-0.92017 ± 0.07099
xy-ric4	zne	-8.22268 ± 0.07642
xy-ric4	noiseoff	-8.36934 ± 0.15125
xy-ric5	vqe	-6.43550 ± 0.07145
xy-ric5	redundant (noise=13)	-6.43550 ± 0.07145
xy-ric5	redundant (noise=47)	-3.29514 ± 0.10699
xy-ric5	redundant (noise=81)	-1.72787 ± 0.09369
xy-ric5	redundant (noise=115)	-0.92017 ± 0.07099
xy-ric5	redundant (noise=149)	-0.49237 ± 0.05256
xy-ric5	zne	-8.29966 ± 0.07818
xy-ric5	noiseoff	-8.36934 ± 0.15125
xy-ric6	vqe	-6.43550 ± 0.07145
xy-ric6	redundant (noise=13)	-6.43550 ± 0.07145
xy-ric6	redundant (noise=47)	-3.29514 ± 0.10699
xy-ric6	redundant (noise=81)	-1.72787 ± 0.09369
xy-ric6	redundant (noise=115)	-0.92017 ± 0.07099
xy-ric6	redundant (noise=149)	-0.49237 ± 0.05256
xy-ric6	redundant (noise=183)	-0.26091 ± 0.03978
xy-ric6	zne	-8.33662 ± 0.07942
xy-ric6	noiseoff	-8.36934 ± 0.15125


xy-ric2
xy-ric3
xy-ric4
xy-ric5
xy-ric6
Exact Solution
Noisy estimation
Ric. ZNE value
Noise-free estimation
Expectation value
Noise level ($\alpha_k\lambda$)
0
−2
−4
−6
−8
0
20
40
25
50
75
100
150

XY VQE CONFIGURATION

Parameter	Value
run	vqe
nqubits	7
state	dmatrix
output.file_name_prefix	xy_noisey_time_evo
output.draw.status	True
output.draw.fig_dpi	100
output.draw.type	png
observable.def	ising
observable.coefficients.cn	[0.5, 0.5, 0.5, 0.5, 0.5, 0.5]
observable.coefficients.bn	[1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0]
observable.coefficients.r	1
ansatz.layer	30
ansatz.gateset	1
ansatz.ugate.type	xy-iss
ansatz.ugate.coefficients.cn	[0.5, 0.5, 0.5, 0.5, 0.5, 0.5]
ansatz.ugate.coefficients.bn	[0, 0, 0, 0, 0, 0, 0]
ansatz.ugate.coefficients.r	0
ansatz.ugate.time.min	0.0
ansatz.ugate.time.max	10.0
vqe.iteration	10
vqe.optimization.status	True
vqe.optimization.algorithm	SLSQP
vqe.optimization.constraint	True
init_param.value	random
noise_profile.status	True
noise_profile.type	depolarizing
noise_profile.noise_prob	[0.001, 0.001, 0.001, 0.001]
noise_profile.noise_on_init_param.status	False
noise_profile.noise_on_init_param.value	0
redundant.identity_factors	[[0, 0, 0, 0], [1, 1, 0, 0]]
zne.method	richardson
zne.degree	1
zne.sampling	default
zne.data_points	