Description	Simulation	Mean $\pm$ Std
xy-ric2	vqe	-6.43550 $\pm$ 0.07145
xy-ric2	redundant (noise=13)	-6.43550 $\pm$ 0.07145
xy-ric2	redundant (noise=47)	-3.29514 $\pm$ 0.10699
xy-ric2	zne	-7.63623 $\pm$ 0.07321
xy-ric2	noiseoff	-8.36934 $\pm$ 0.15125
xy-ric3	vqe	-6.43550 $\pm$ 0.07145
xy-ric3	redundant (noise=13)	-6.43550 $\pm$ 0.07145
xy-ric3	redundant (noise=47)	-3.29514 $\pm$ 0.10699
xy-ric3	redundant (noise=81)	-1.72787 $\pm$ 0.09369
xy-ric3	zne	-8.05195 $\pm$ 0.07442
xy-ric3	noiseoff	-8.36934 $\pm$ 0.15125
xy-ric4	vqe	-6.43550 $\pm$ 0.07145
xy-ric4	redundant (noise=13)	-6.43550 $\pm$ 0.07145
xy-ric4	redundant (noise=47)	-3.29514 $\pm$ 0.10699
xy-ric4	redundant (noise=81)	-1.72787 $\pm$ 0.09369
xy-ric4	redundant (noise=115)	-0.92017 $\pm$ 0.07099
xy-ric4	zne	-8.22268 $\pm$ 0.07642
xy-ric4	noiseoff	-8.36934 $\pm$ 0.15125

xy-ric2 · xy-ric3 · xy-ric4

Legend for each panel: Exact Solution; Noisy estimation; Ric. ZNE value; Noise-free estimation

Axes: Expectation value (vertical); Noise level ($\alpha_k \lambda$) (horizontal)
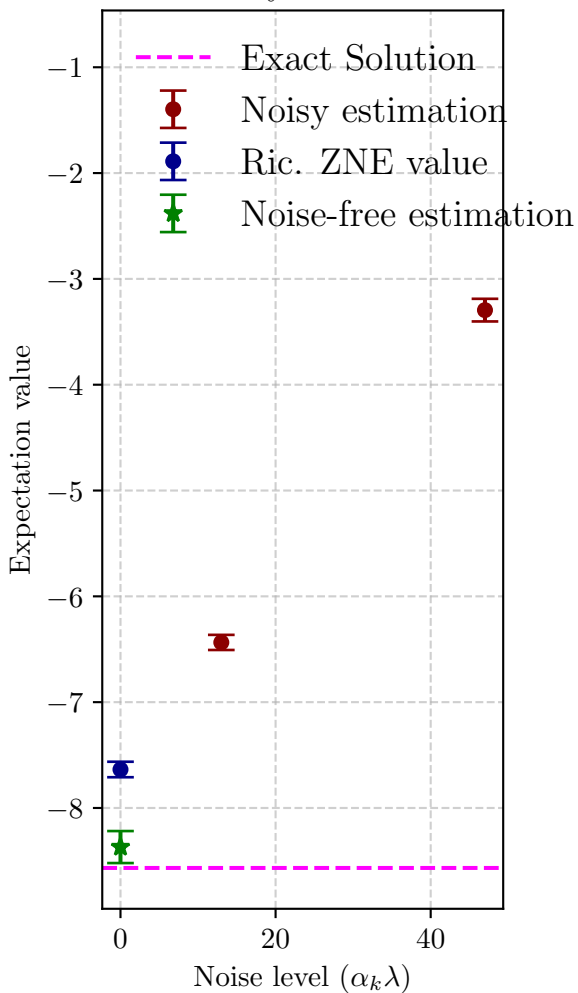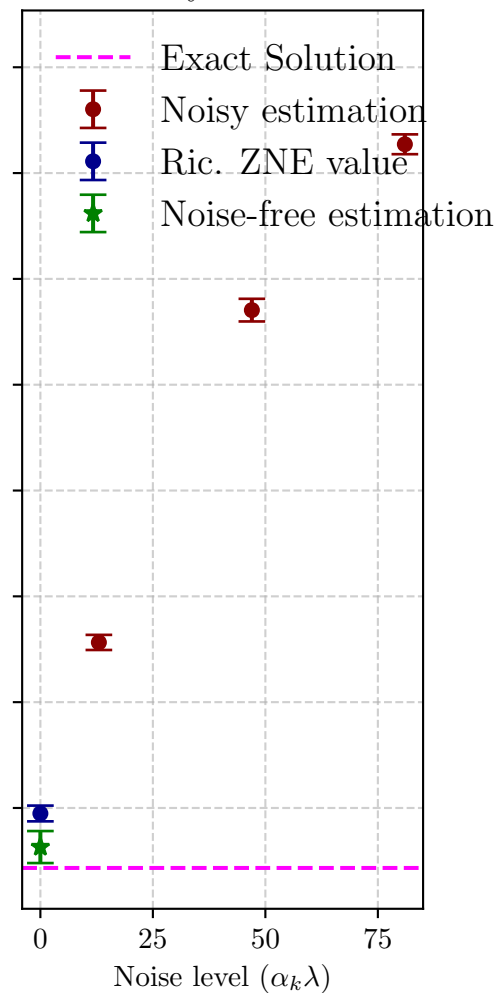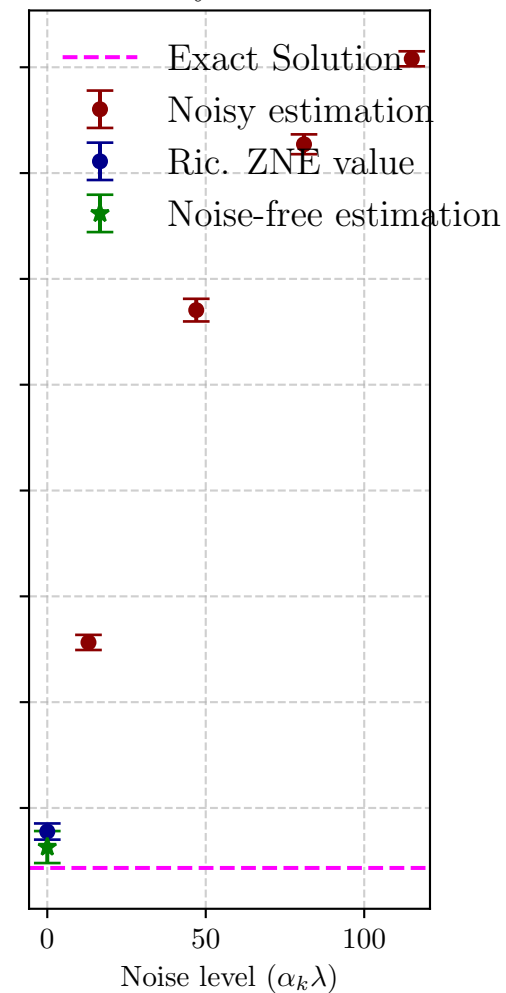
XY VQE CONFIGURATION

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	