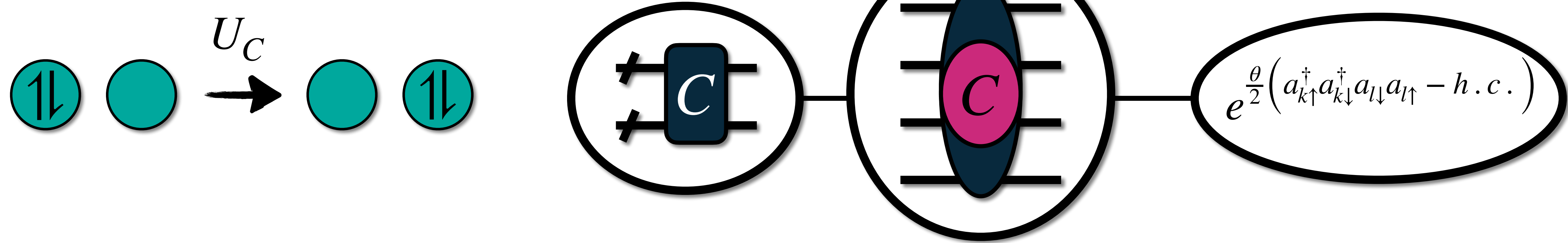


Molecular Quantum Circuit Design

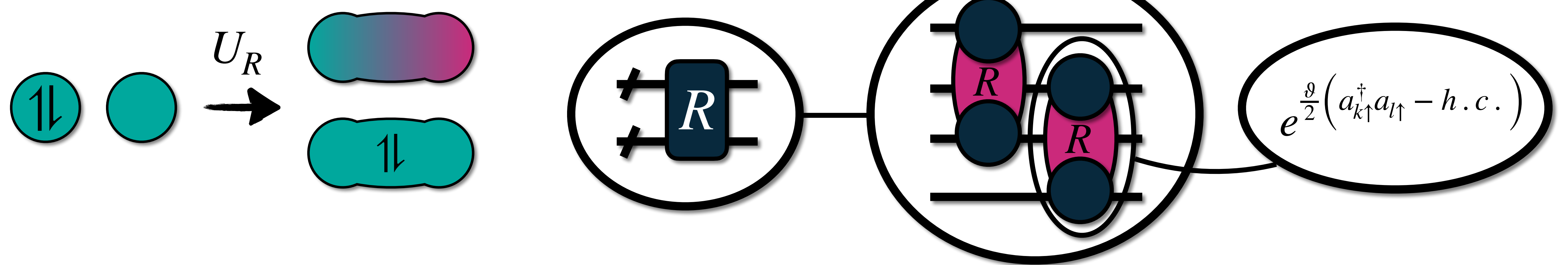


Interpretable Quantum Circuits

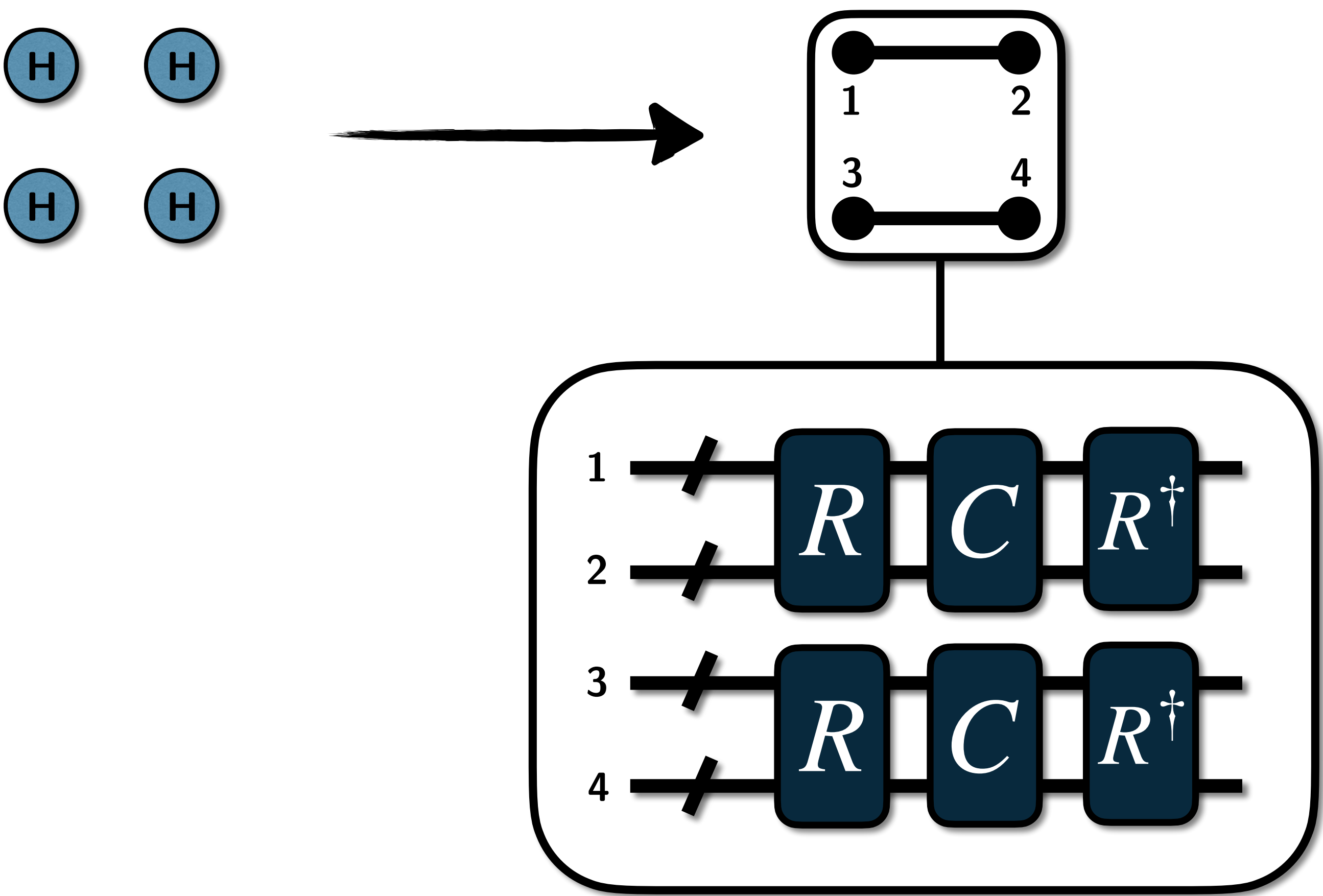
Pair Correlators



Basis Change



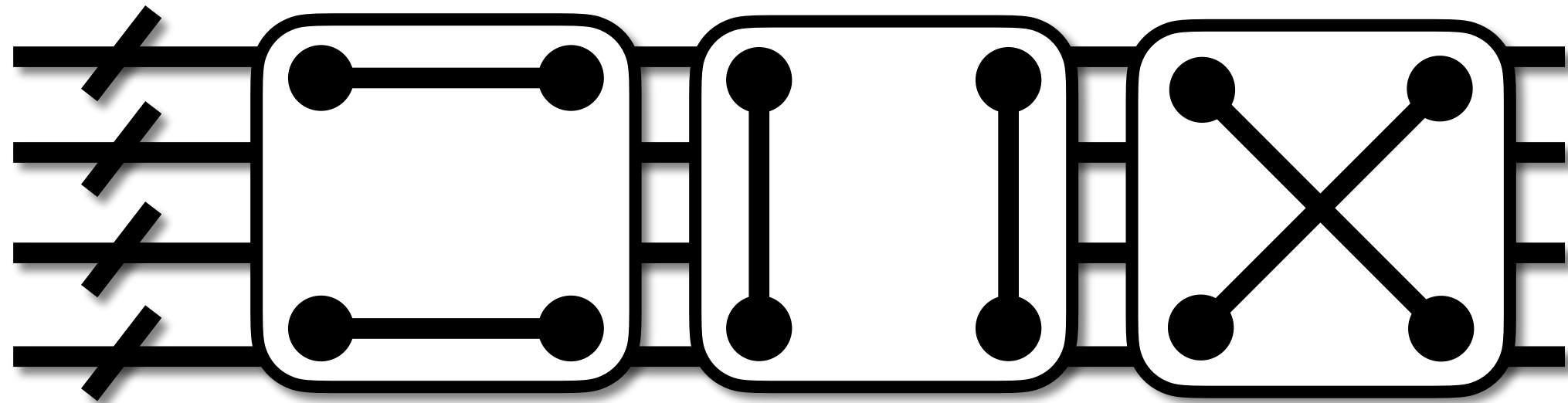
High-Level Design



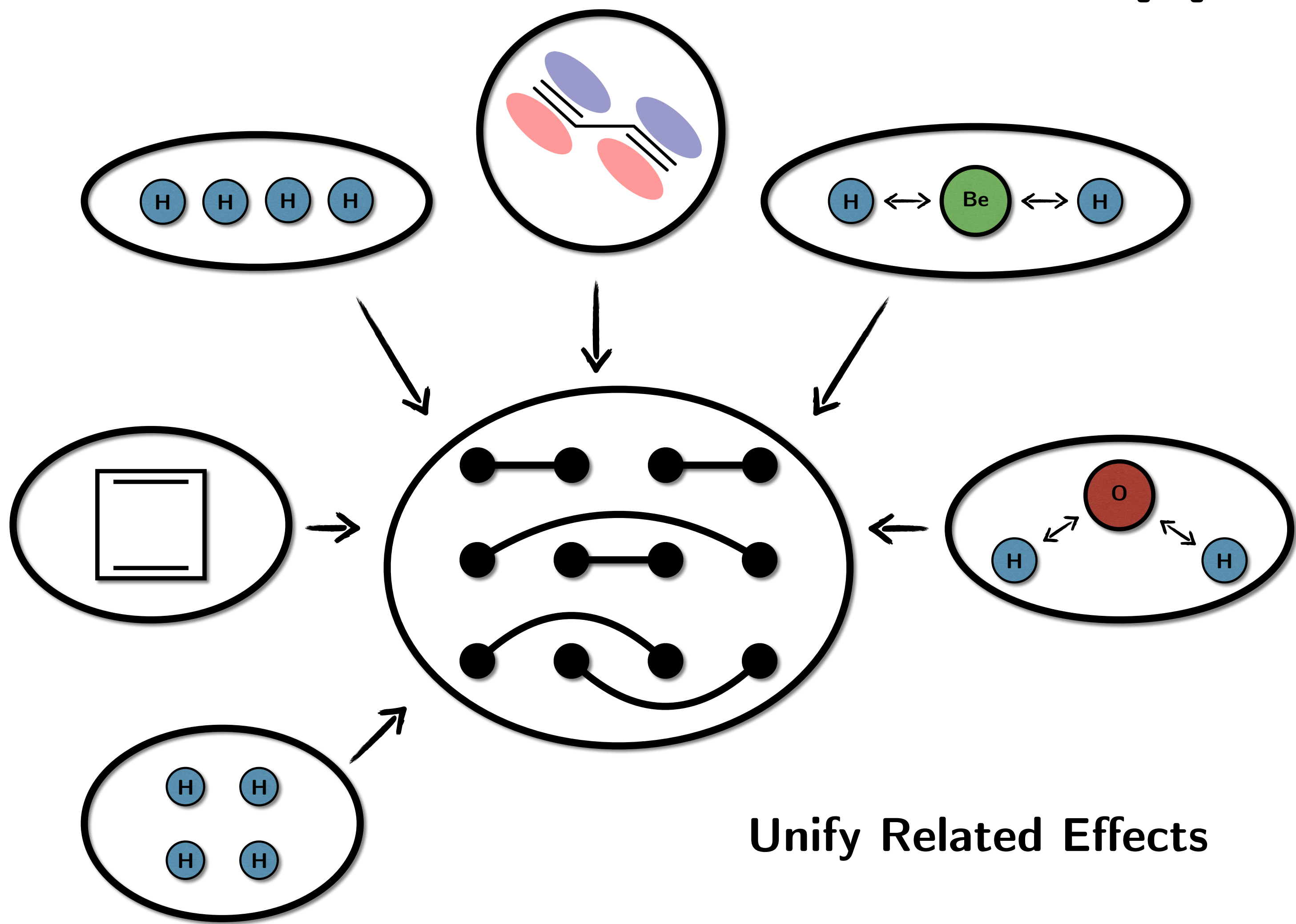
Krylov-Style Wavefunction

$$a \left| \begin{array}{cc} \bullet & \bullet \\ \bullet & \bullet \end{array} \right\rangle + b \left| \begin{array}{cc} \bullet & \bullet \\ \bullet & \bullet \end{array} \right\rangle + c \left| \begin{array}{cc} \bullet & \bullet \\ \bullet & \bullet \end{array} \right\rangle$$

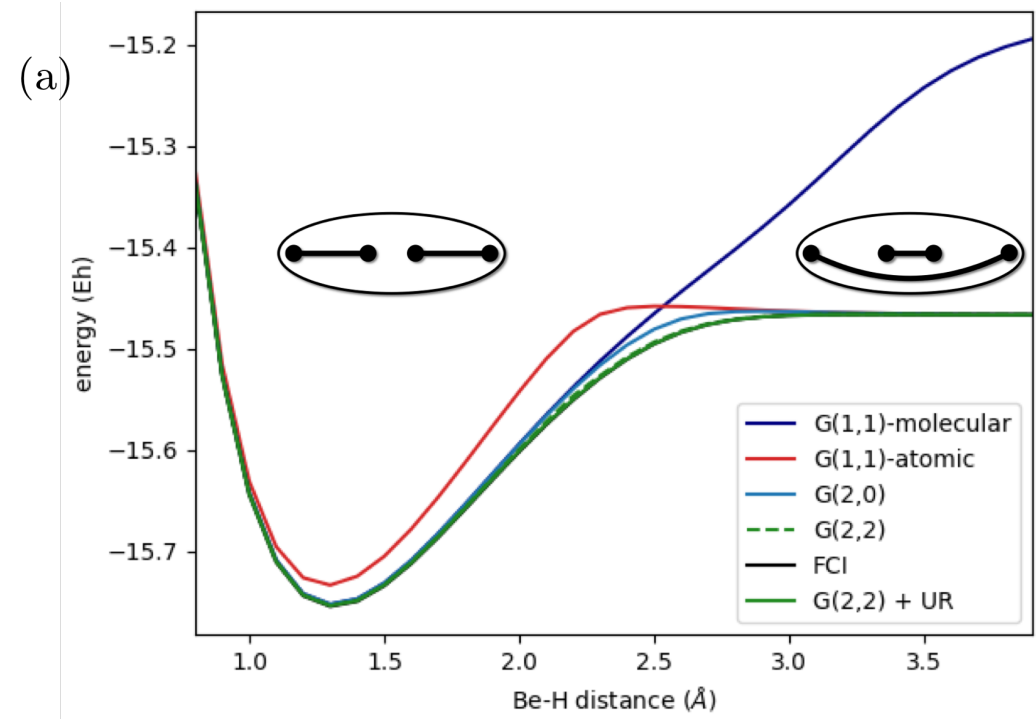
VQE-Style Wavefunction



Applications



Unify Related Effects



Low cost with explainable Performance

method	error	F	N_v	cnots	depth	iter
SPA	16	94	2	6	3	17*
SPA+	8	96	6	116	131	10
SPA+CRRCRRC	0	100	19	334	367	160
UpCCD	103	88	4	20	26	8
UpCCSD	86	74	12	148	193	13
UpCCGSD	86	74	18	188	254	13
2-UpCCGSD	32	90	36	432	540	48
ADAPT(UpCCGSD)	32	90	12	448	442	113
ADAPT(UCCGSD)	0	100	21	1360	1705	58

SPA = Single Graph