Squantikz squimports
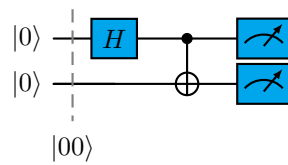
Saverio Monaco

September 24, 2025
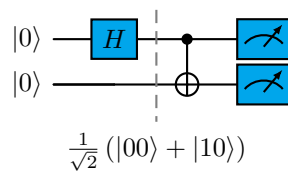
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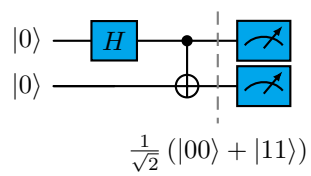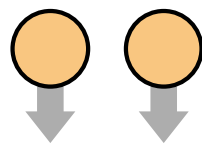# 1 Commands

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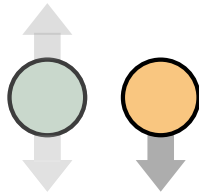

bellcircuit2

bellcircuit3

bellspins1

bellspins2

bellspins3
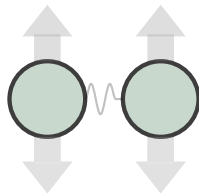
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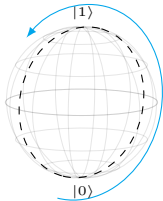
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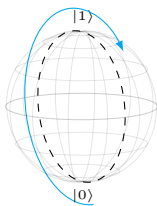
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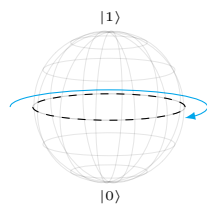
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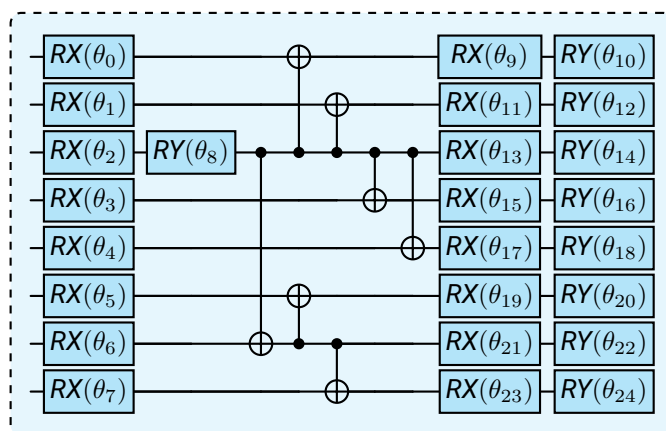
gateCNOT

$$\equiv \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}$$

gateH

$$\boxed{H} \equiv \frac{1}{\sqrt{2}} \begin{pmatrix} +1 & -1 \\ -1 & +1 \end{pmatrix}$$

gateRX

$$RX(\theta) \equiv \begin{pmatrix} \cos\left(\frac{\theta}{2}\right) & -i\sin\left(\frac{\theta}{2}\right) \\ -i\sin\left(\frac{\theta}{2}\right) & \cos\left(\frac{\theta}{2}\right) \end{pmatrix}$$

gateRY

$$RY(\theta) \equiv \begin{pmatrix} +\cos\left(\frac{\theta}{2}\right) & -\sin\left(\frac{\theta}{2}\right) \\ -\sin\left(\frac{\theta}{2}\right) & +\cos\left(\frac{\theta}{2}\right) \end{pmatrix}$$

gateRz

$$RZ(\theta) \equiv \begin{pmatrix} e^{-i\theta/2} & 0 \\ 0 & e^{+i\theta/2} \end{pmatrix}$$
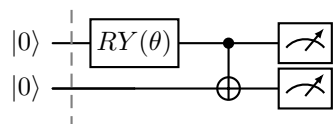
meas
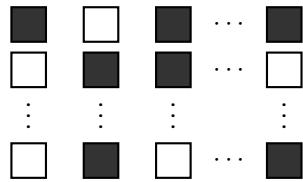
measbin

$$\begin{matrix} 0 & 1 & 0 & \cdots & 0 \\ 1 & 0 & 0 & \cdots & 1 \\ \vdots & \vdots & \vdots & & \vdots \\ 1 & 0 & 1 & \cdots & 0 \end{matrix}$$
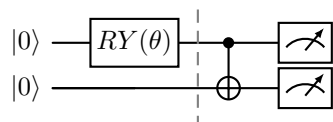
measbinalt

$$\begin{matrix} 1 & 1 & 1 & \cdots & 0 \\ 1 & 1 & 0 & \cdots & 1 \\ \vdots & \vdots & \vdots & & \vdots \\ 0 & 0 & 1 & \cdots & 1 \end{matrix}$$
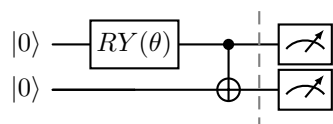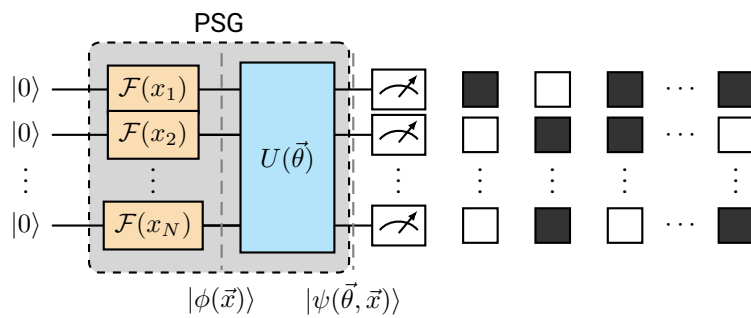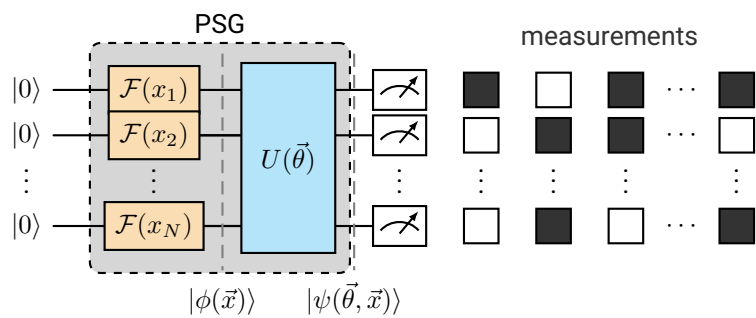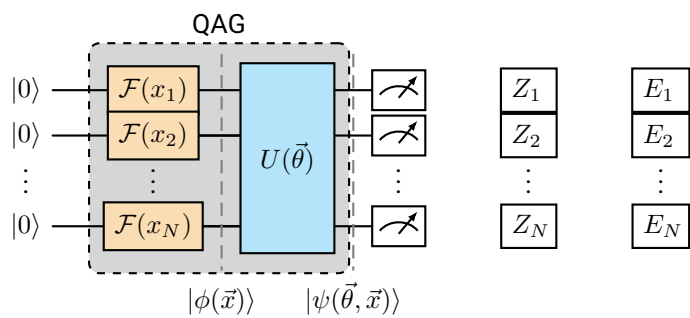
pbellcircuit1

pbellcircuit2

pbellcircuit3

psg

psg_model

qag

qag_model
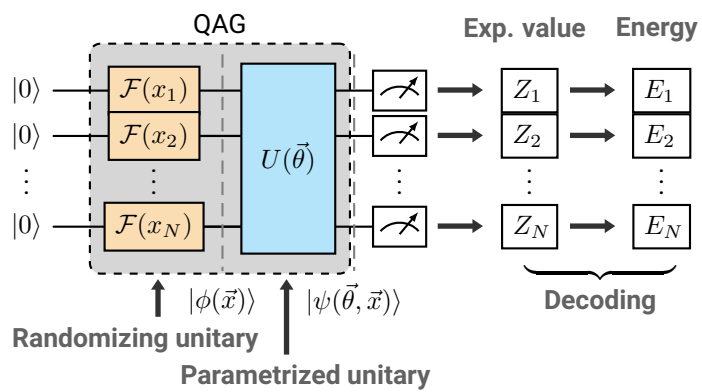
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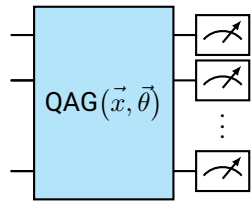
qag_train

qagalt

qagbp

qc

QC

$|0\rangle^{\otimes N}$ $|\psi(\vec{\theta})\rangle = U(\vec{\theta})|0\rangle^{\otimes N}$

qcsimple

$|\psi(\vec{\theta})\rangle = U(\vec{\theta})|0\rangle^{\otimes N}$

qml

qml_model

9

Data Encoding unitary

$|0\rangle$ **state preparation**

$\mathcal{F}(\vec{x})$ $U(\vec{\theta})$

Measurements

Parametrized unitary
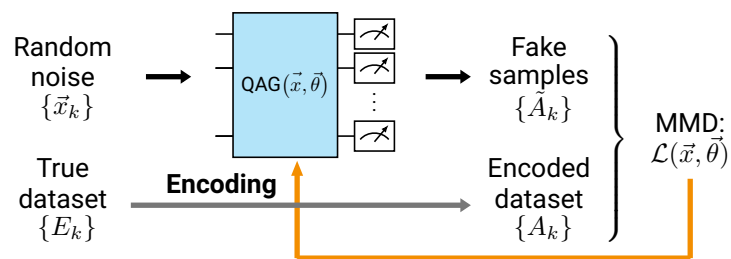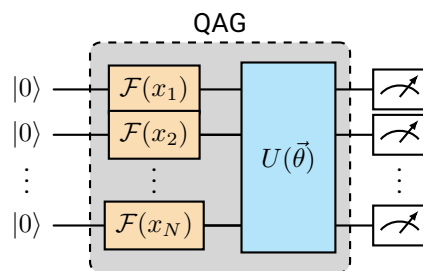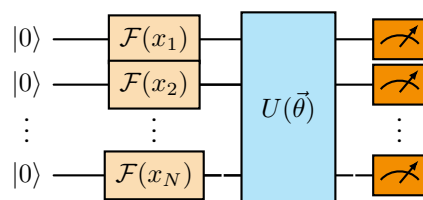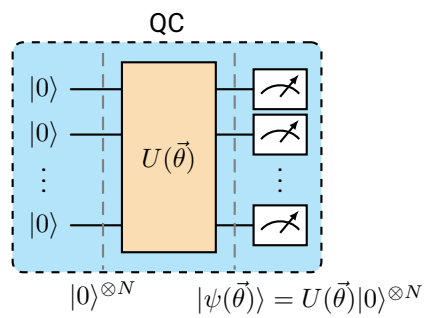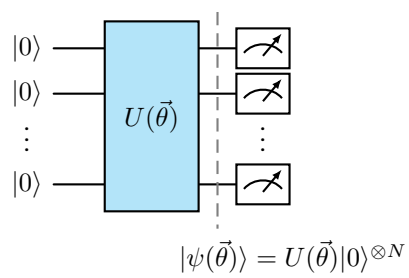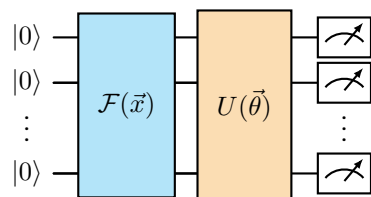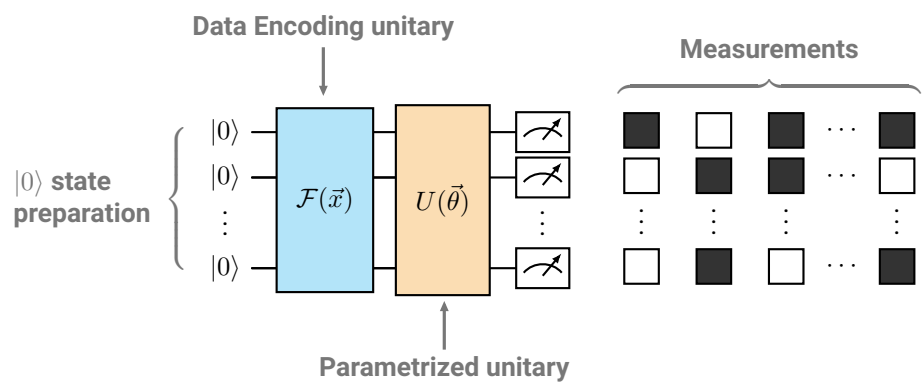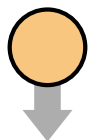
spin

spindown

spindowns
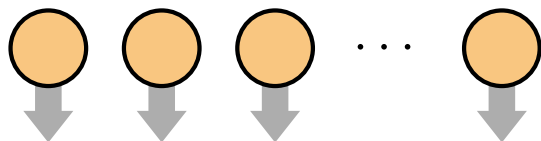
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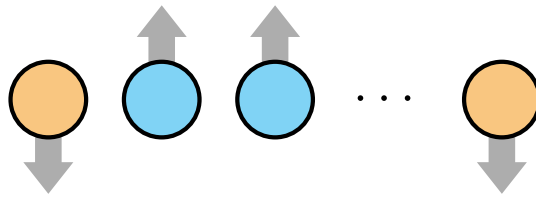
spinrandalt
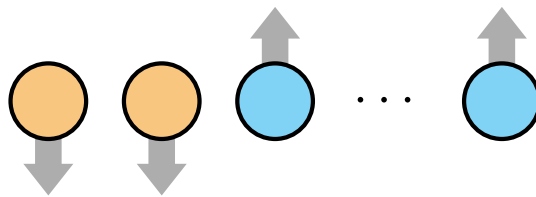
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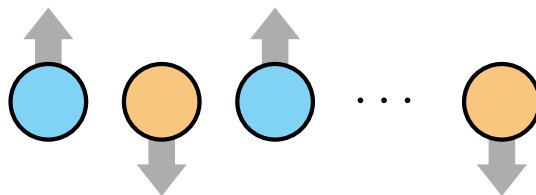
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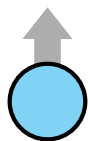
twospinsdown

twospinsup