FFT $O(t)$

frequency

0

Eigenvalues

$|\psi_0\rangle$	$\hat{O}$	
$|001\rangle$	$\hat{\sigma}^z$	$= \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$
$\dfrac{|000\rangle + |001\rangle}{\sqrt{2}}$	$\hat{\sigma}_1^x$	$= \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
$\dfrac{|000\rangle + |001\rangle}{\sqrt{2}}$	$\dfrac{\hat{\sigma}^x + i\hat{\sigma}^y}{2}$	$= \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix}$