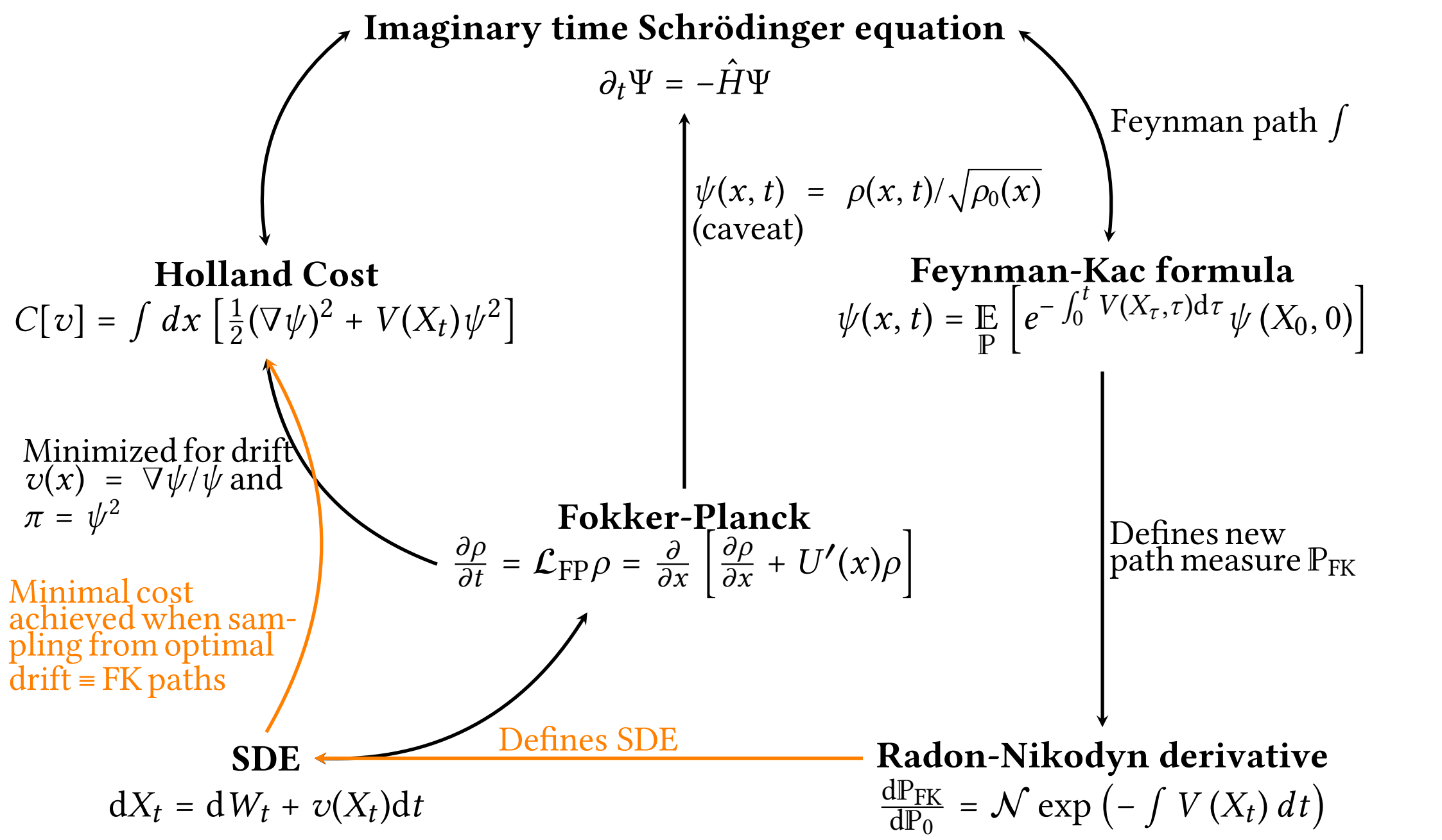
Imaginary time Schrödinger equation
$\partial_t \Psi = -\hat{H}\Psi$
Feynman path $\int$
$\psi(x,t) = \rho(x,t)/\sqrt{\rho_0(x)}$
(caveat)
Holland Cost
$C[v] = \int dx \left[\frac{1}{2}(\nabla\psi)^2 + V(X_t)\psi^2\right]$
Feynman-Kac formula
$\psi(x,t) = \mathop{\mathbb{E}}_{\mathbb{P}}\left[e^{-\int_0^t V(X_\tau,\tau)\mathrm{d}\tau}\psi(X_0,0)\right]$
Minimized for drift
$v(x) = \nabla\psi/\psi$ and
$\pi = \psi^2$
Fokker-Planck
$\frac{\partial\rho}{\partial t} = \mathcal{L}_{\mathrm{FP}}\rho = \frac{\partial}{\partial x}\left[\frac{\partial\rho}{\partial x} + U'(x)\rho\right]$
Defines new
path measure $\mathbb{P}_{\mathrm{FK}}$
Minimal cost
achieved when sam-
pling from optimal
drift ≡ FK paths
Defines SDE
SDE
$\mathrm{d}X_t = \mathrm{d}W_t + v(X_t)\mathrm{d}t$
Radon-Nikodyn derivative
$\frac{\mathrm{d}\mathbb{P}_{\mathrm{FK}}}{\mathrm{d}\mathbb{P}_0} = \mathcal{N}\exp\left(-\int V(X_t)\,dt\right)$