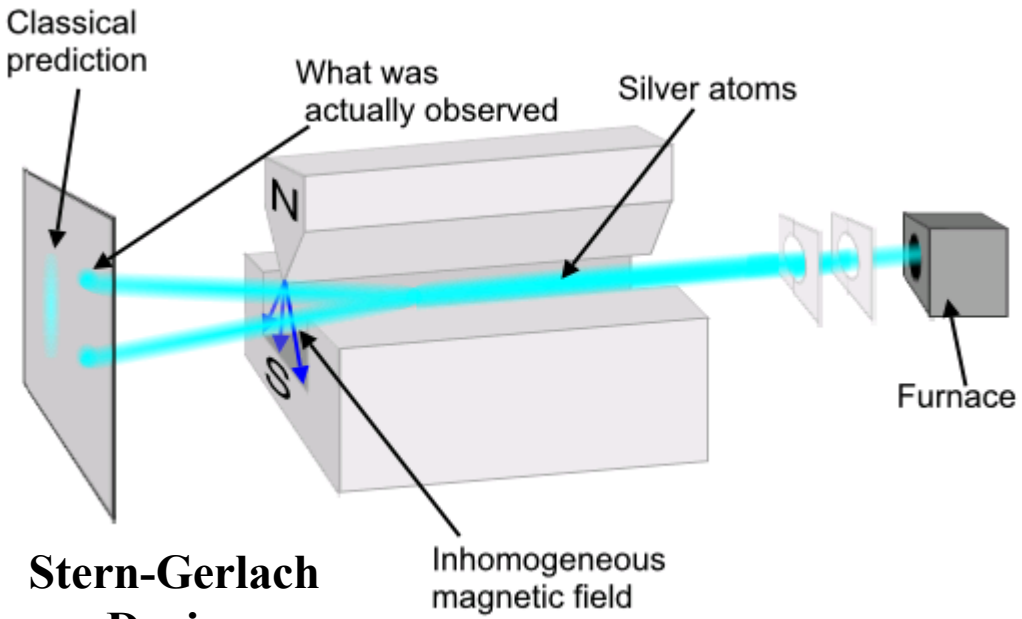
Examples of Two-State Quantum Systems

Spin-1/2 particle in a magnetic field



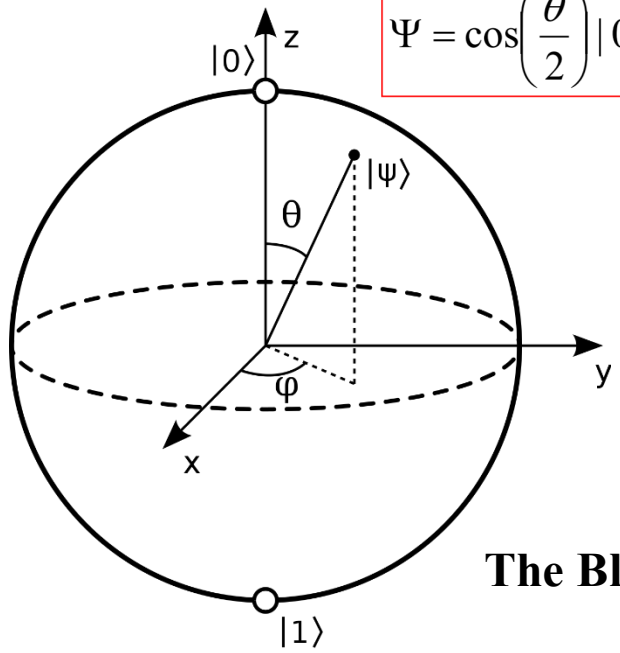
Stern-Gerlach Device

Neutrino oscillations

Neutral K-Meson oscillation

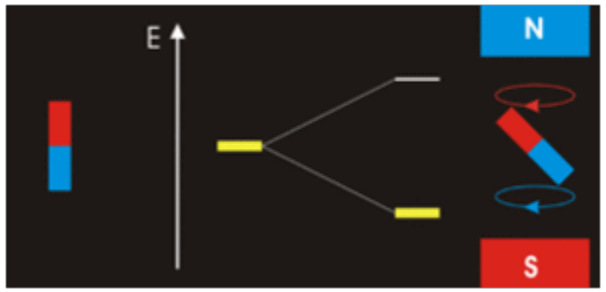
Qubits

$$\Psi = \cos\left(\frac{\theta}{2}\right)|0> + e^{i\phi}\sin\left(\frac{\theta}{2}\right)|1>$$



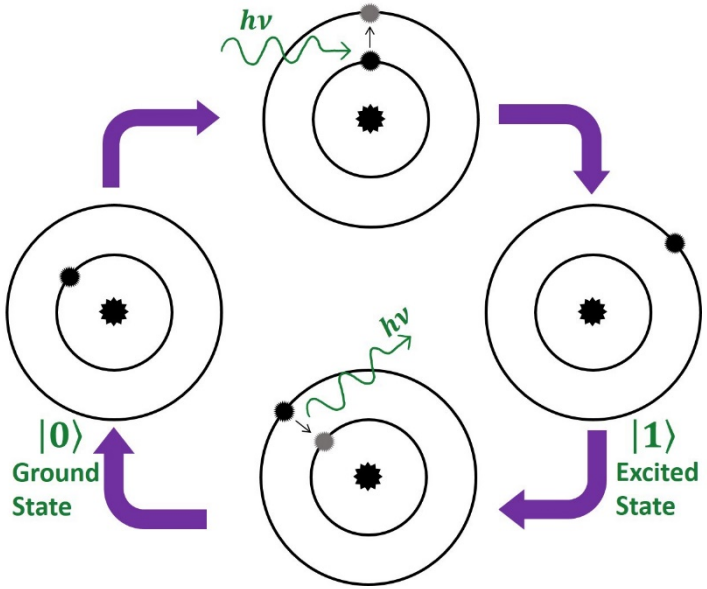
The Bloch sphere

Nuclear Magnetic Resonance



Examples of Two-State Quantum Systems

Atoms (approximately)



Photon Polarization