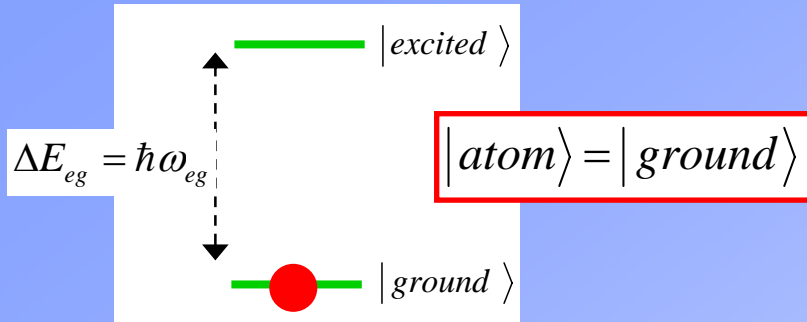
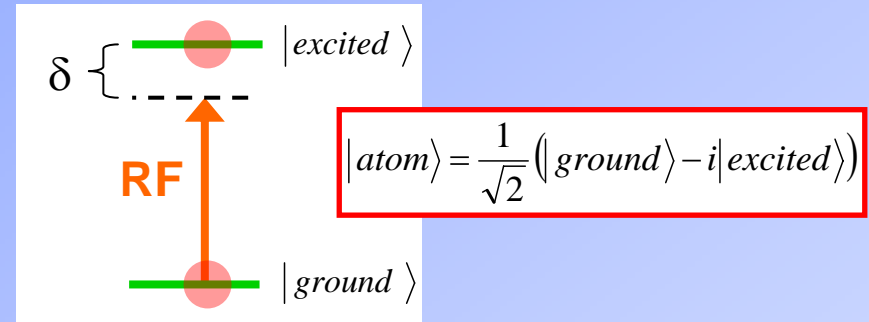


Atomic Clock: basic operation

Step 1: Initialization



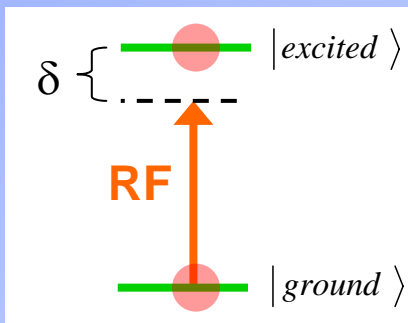
Step 2: Rabi $\pi/2$ pulse



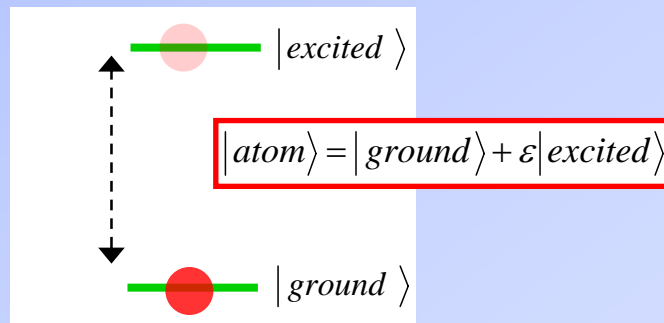
Step 3: wait a time T (determined by electronic clock)

$$|atom(t = T)\rangle = \frac{1}{\sqrt{2}}(|ground\rangle - ie^{-i\omega_{eg}T}|excited\rangle)$$

Step 4: Rabi $\pi/2$ pulse again



Step 5: Readout



Step 6:
Correct electronic clock

$$\delta \rightarrow 0$$