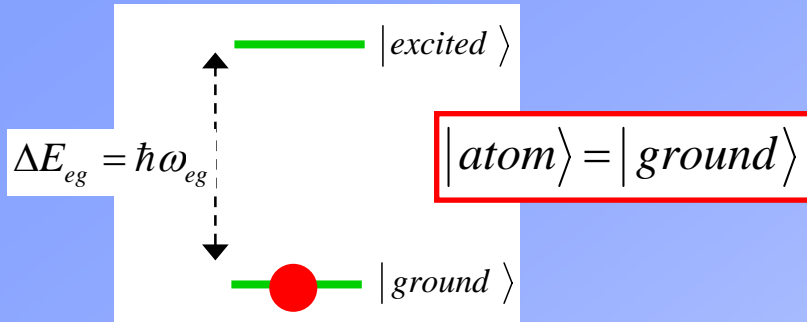


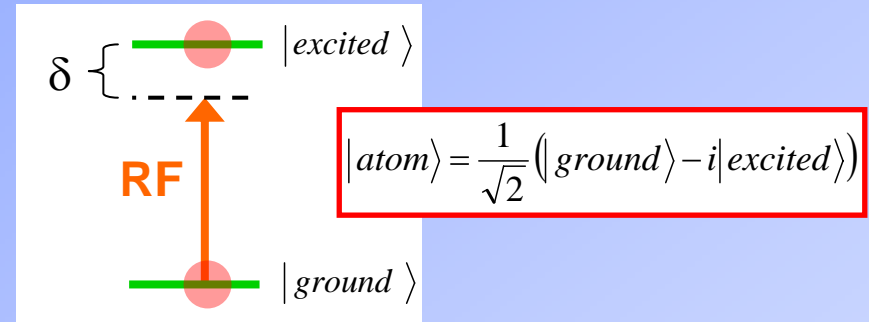


# Atomic Clock: basic operation

Step 1: Initialization



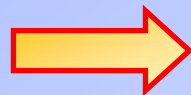
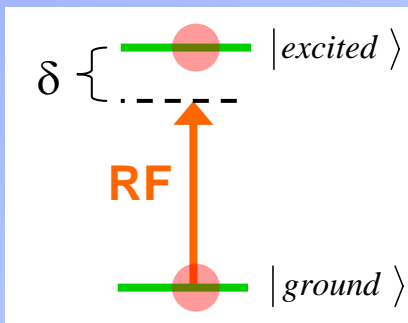
Step 2: Rabi  $\pi/2$  pulse



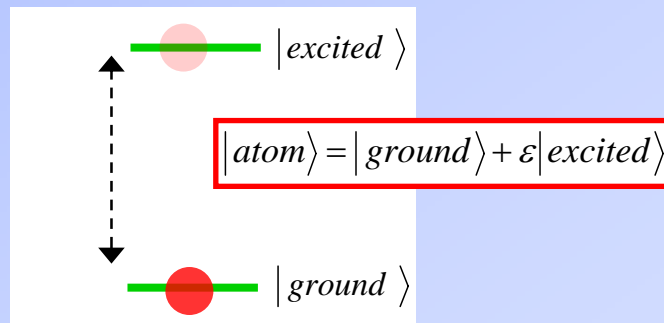
Step 3: wait a time  $T$  (determined by electronic clock)

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

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



Step 5: Readout



Step 6:  
Correct electronic clock

$$\delta \rightarrow 0$$