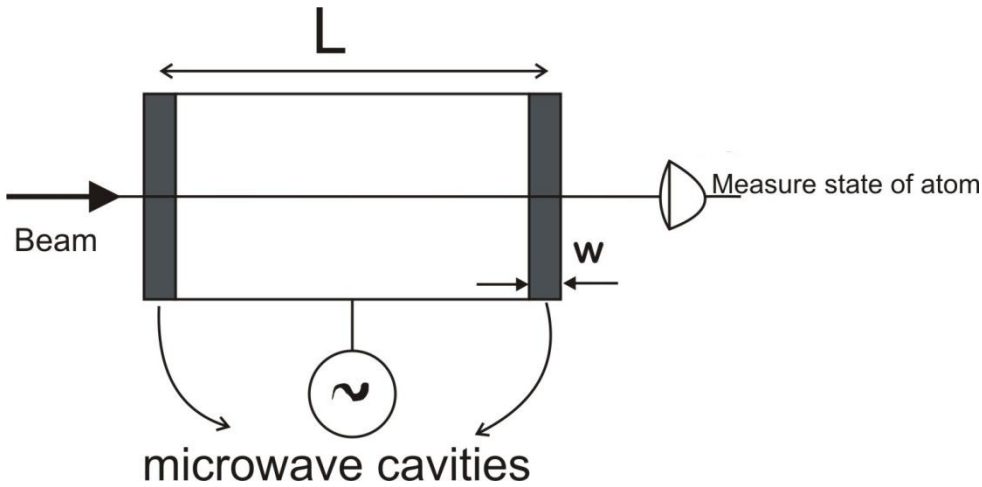


Physics 4062/5062 – Tutorial Ten – Atomic Clocks

Atomic Beam Clocks

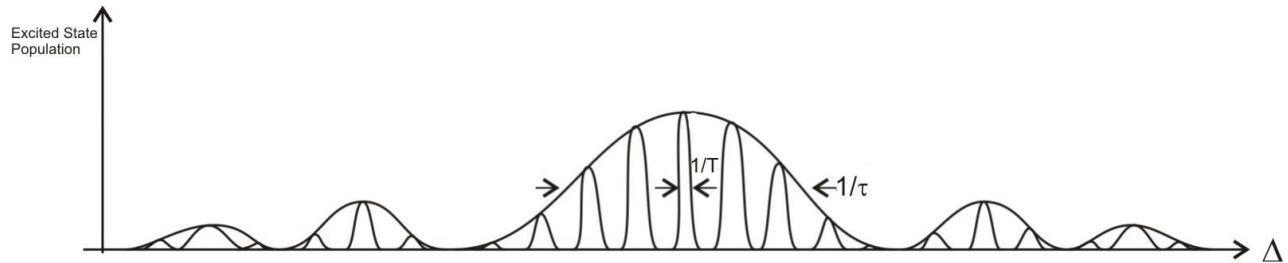


Two spatially separated interaction zones in which atoms are excited between ground states using microwaves.

$$T = L/u \sim 10^{-3} \text{ s}$$

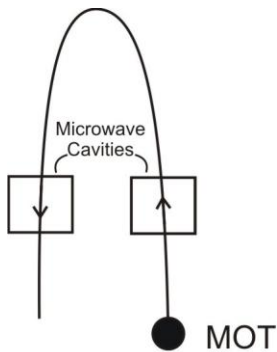
$$\tau = w/u$$

Atomic Response to Two Pulses/Interactions → See lecture notes



Analogy with diffraction/interference patterns

Cold Atom Clocks



$$T = L/u \sim 1 \text{ s}$$

Precision of cold atoms clocks $\sim 10^{-16}$ seconds