

- 1 W of power.
- focused down to 100 $\mu m.$



- 1 W of power.
- focused down to 100 $\mu\text{m}.$

<u>Atom: ⁸⁷Rb</u> DC polarizability: $\alpha = h \cdot 0.08 Hz / (\frac{V}{cm})^2$



- 1 W of power.
- focused down to 100 $\mu\text{m}.$

<u>Atom: ⁸⁷Rb</u> DC polarizability: $\alpha = h \cdot 0.08 Hz / (\frac{V}{cm})^2$

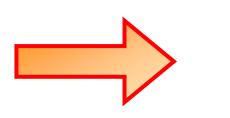
 \Rightarrow Intensity ~ 10⁸ W/m², Electric field ~ 3 × 10³ V/cm



- 1 W of power.
- focused down to 100 $\mu\text{m}.$

<u>Atom: ⁸⁷Rb</u> DC polarizability: $\alpha = h \cdot 0.08 Hz / (\frac{V}{cm})^2$

 \Rightarrow Intensity ~ 10⁸ W/m², Electric field ~ 3 × 10³ V/cm

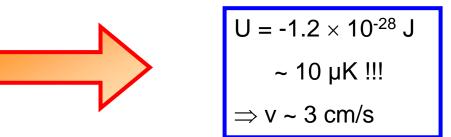




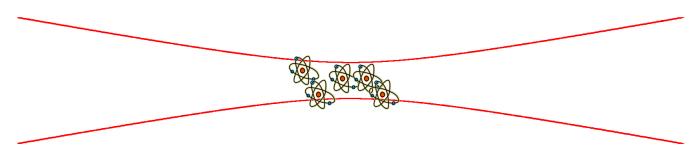
- 1 W of power.
- focused down to 100 $\mu\text{m}.$

<u>Atom: ⁸⁷Rb</u> DC polarizability: $\alpha = h \cdot 0.08 Hz / (\frac{V}{cm})^2$

 \Rightarrow Intensity ~ 10⁸ W/m², Electric field ~ 3 × 10³ V/cm



Ultracold atoms are trapped by focused laser light !!!





- 1 W of power.
- focused down to 100 $\mu\text{m}.$

<u>Atom: ⁸⁷Rb</u> DC polarizability: $\alpha = h \cdot 0.08 Hz / (\frac{V}{cm})^2$

 \Rightarrow Intensity ~ 10⁸ W/m², Electric field ~ 3 × 10³ V/cm

 $U = -1.2 \times 10^{-28} \text{ J}$ $\sim 10 \ \mu\text{K } !!!$ $\Rightarrow v \sim 3 \text{ cm/s}$

Ultracold atoms are trapped by focused laser light !!!

