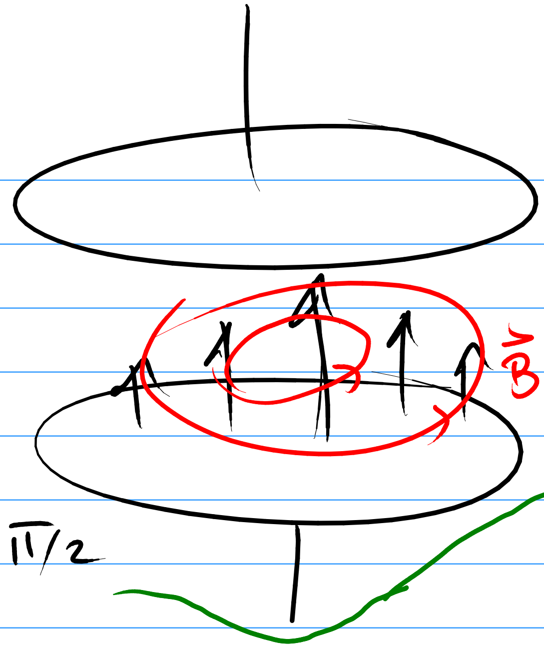


From last lecture

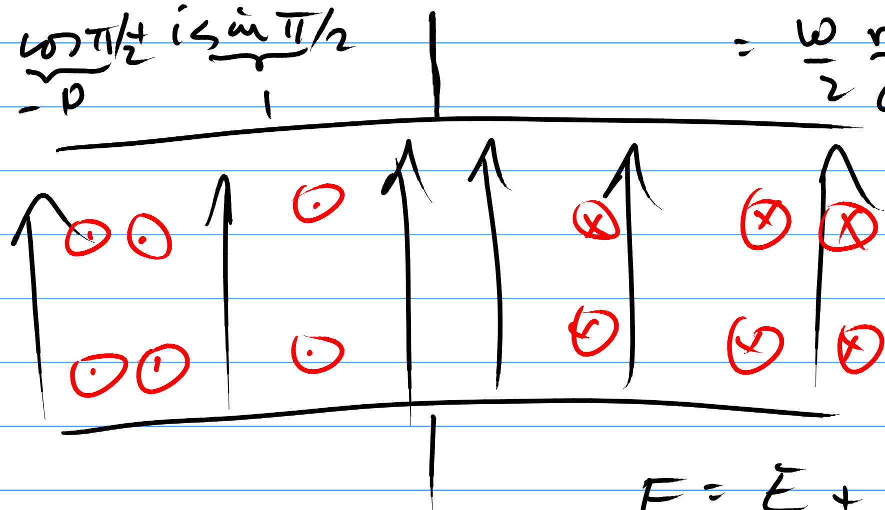
$$E = E_1 e^{i\omega t}\left(1 - \frac{1}{4}\frac{\omega^2 r^2}{c^2} + \dots\right)$$

$$B_1 = i\,\frac{\omega}{2}\frac{r}{c^2}E_1 e^{i\omega t}$$

i is a phase shift

$$i = e^{i\pi/2} = \underbrace{\cos\pi/2}_{0} + i\underbrace{\sin\pi/2}_{1}$$

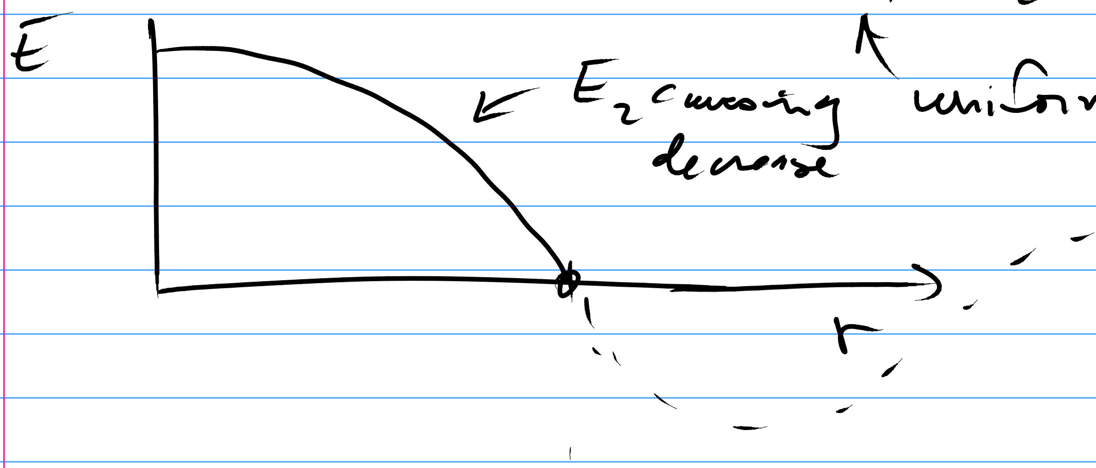
$$= \frac{\omega}{2}\frac{r}{c^2}E_1 e^{i(\omega t + \pi/2)}$$

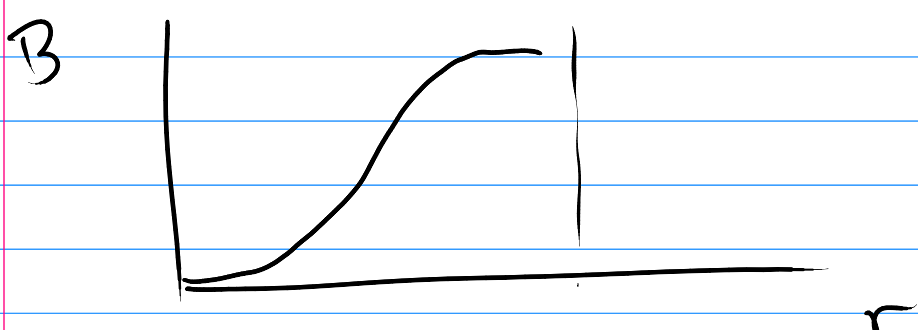


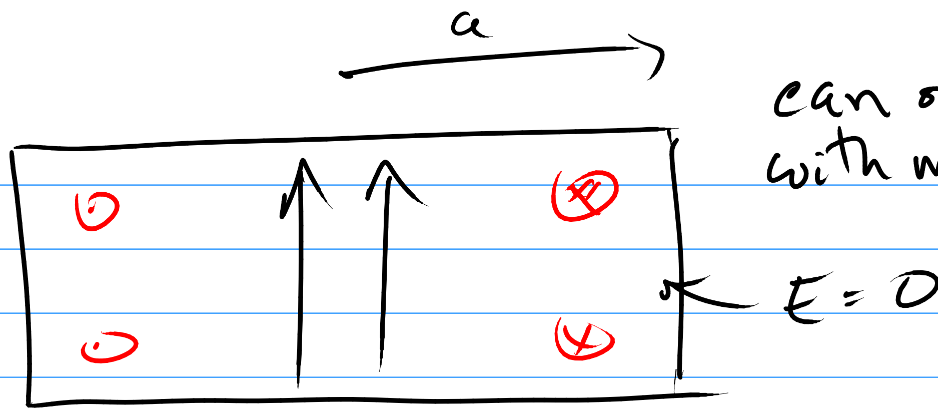
subtracts from E_1

$$E = E_1 + E_2 + E_3 + \dots$$

uniform

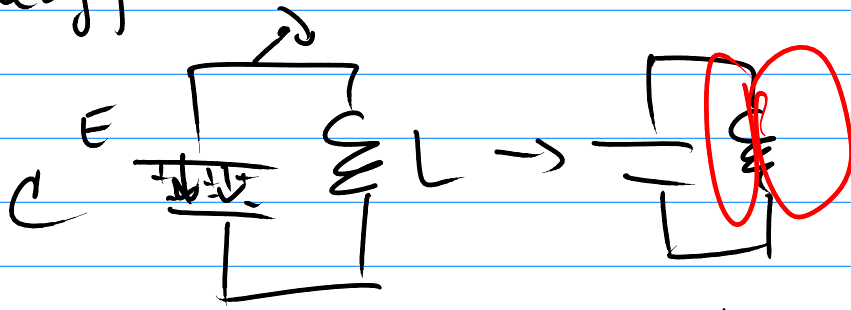




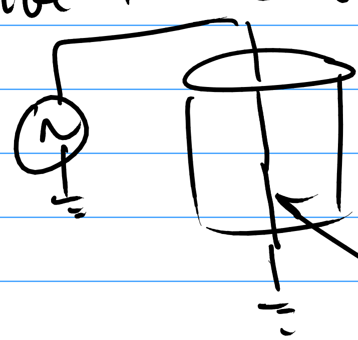


can or cap
with metal side

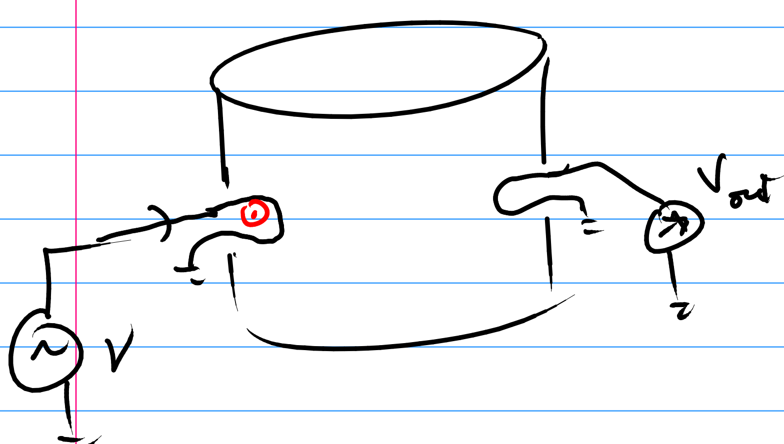
analogy with LC oscillator

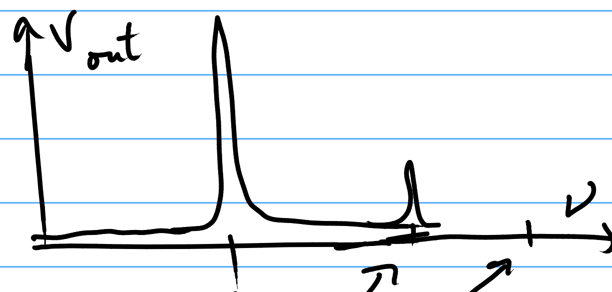


how can you drive this can into resonance using function generator & wire?

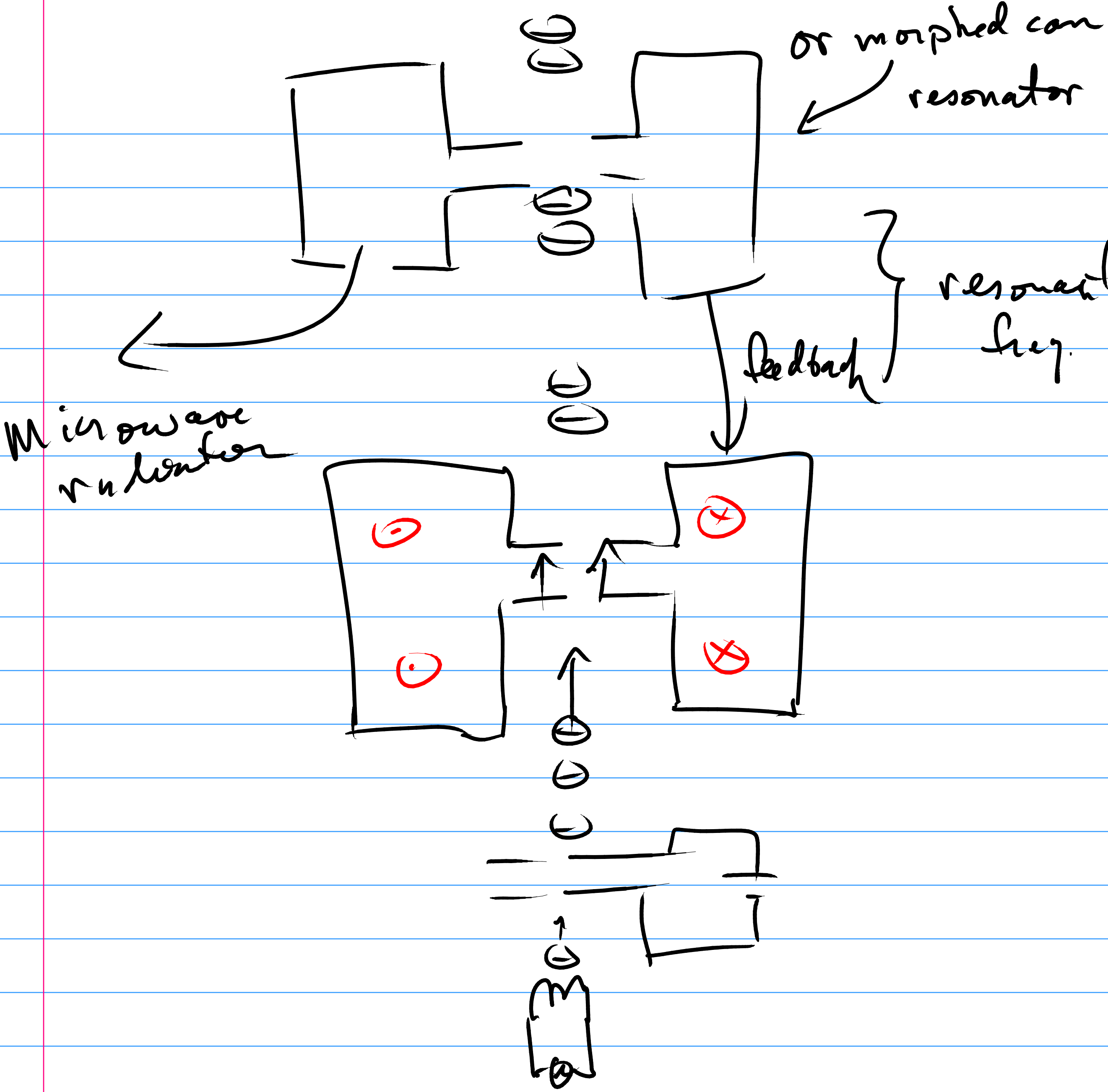


B is max near wire
while B_{can} is max
away from wire





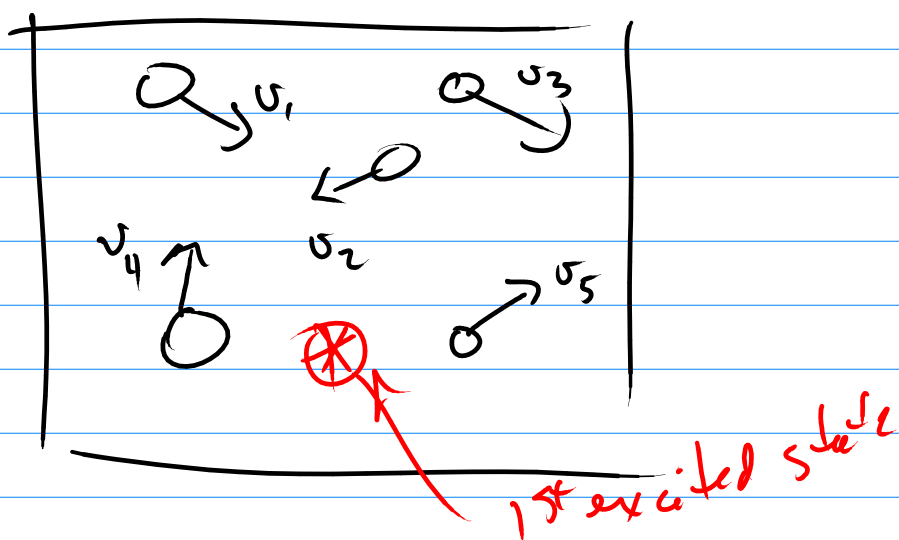
zero of Bessel functions



plinko

hydrogen

temp ∝ KE of gas atoms



Prob $\propto$ # ways dist. energy

$$e^{-\Delta E/kT} = \frac{\text{\# excited state}}{N}$$

$\Delta E = 13.6\,eV$ $\quad\quad kT = .025\,eV$

$$\frac{\text{\# of atoms in excited state}}{\text{\# atoms in container}} = e^{-\frac{\Delta E}{kT}} = e^{-544}$$