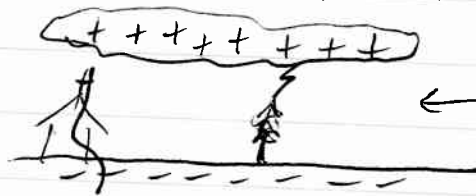
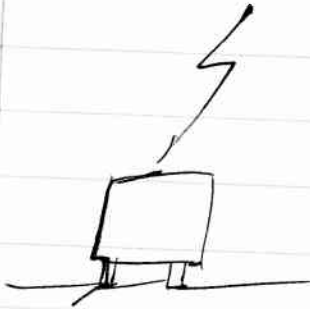


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LIGHTNING IS LIKE A PARALLEL PLATE CAPACITOR



DIELECTRIC  
= AIR

~~POOR~~ POOR  
CONDUCTOR

LIGHTNING ROD  
DISTRIBUTES CHARGE  
& DIRECTS IT THRU  
WIRE, NOT HOUSE

WATER ANALOGY WITH CHARGE

WATER

WATER

PIPES

~~PIPE~~ STUFF IN PIPE

VALVE

PUMP

PRESSURE

DOUBLE WATER TOWER

CHARGE

CHARGE

WIRES

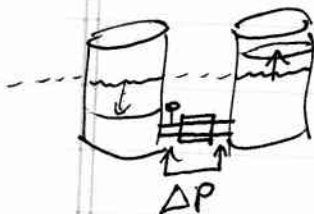
RESISTANCE

SWITCH

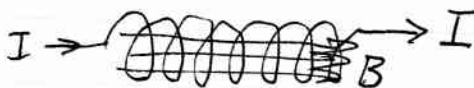
BATTERY

VOLTAGE

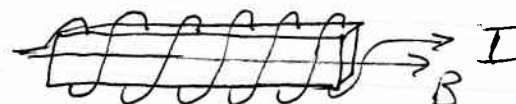
CAPACITOR



ELECTROMAGNET

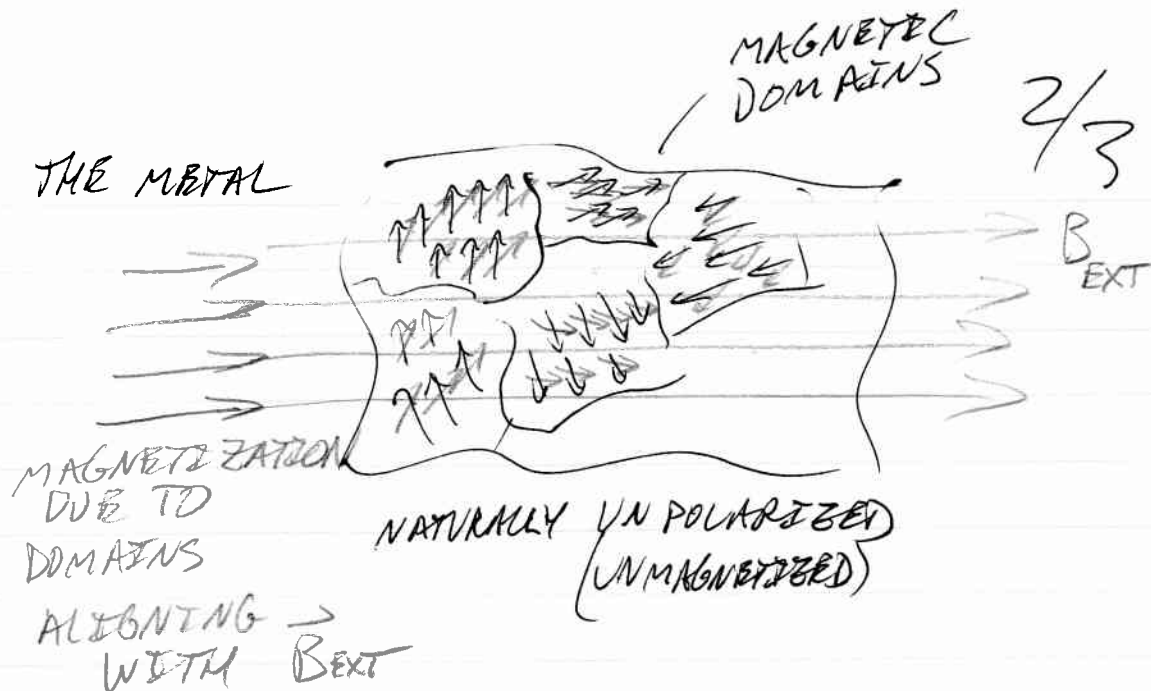


MAGNIFY THE EFFECT BY  
PUTTING IN A FERROUS METAL



↑  
DUE TO  
CURRENT

INSIDE THE METAL



## ELECTRO-MAGNETIC WAVES

↑  
RISE AND FALL OF ELECTRIC FIELD  
RISE AND FALL OF MAGNETIC FIELD

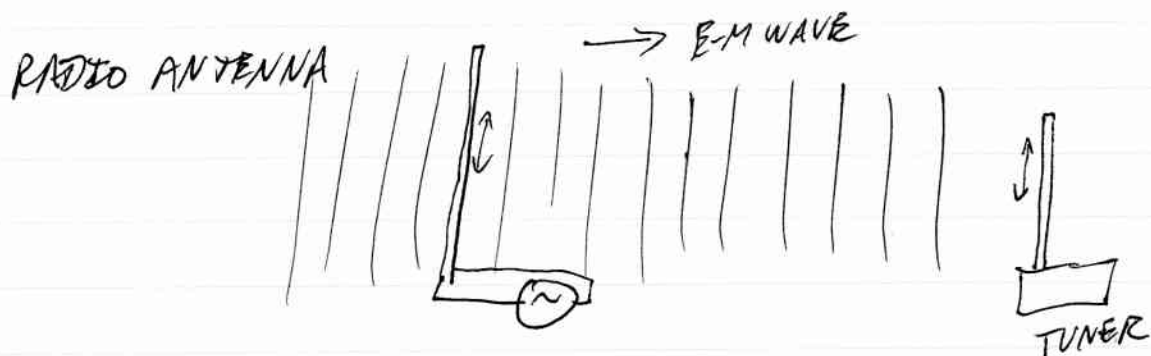
TRANSFER ENERGY THRU VACUUM

GENERATE AN E-M WAVE BY ACCELERATING A CHARGE

STATIONARY CHARGE → E-FIELD

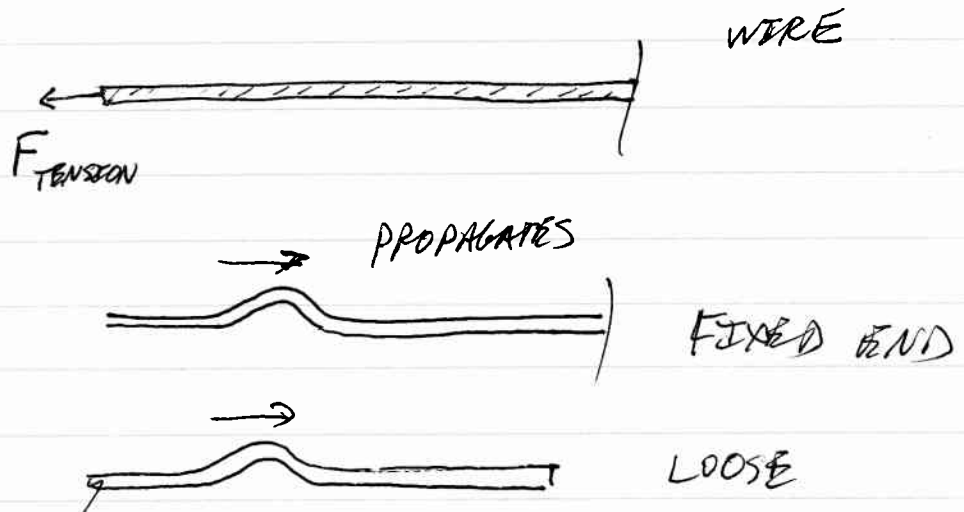
MOVING " " → E-FIELD & B-FIELD

ACCEL. " " → E-M WAVE

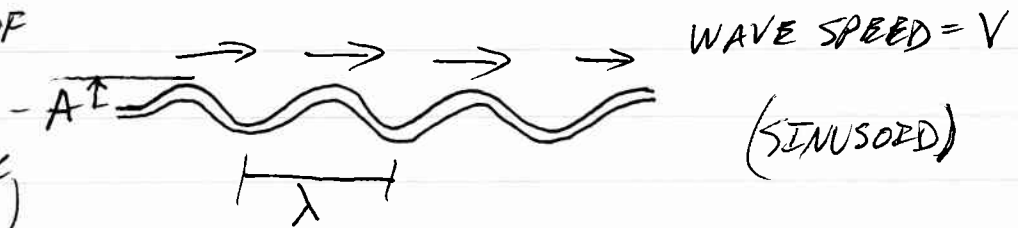


MECHANICAL WAVES - ENERGY TRAVELLING THRU A  
MEDIUM -  $\begin{matrix} \text{WATER} \\ \text{AIR} \end{matrix}$  SOLID

PULSE:



PERIODIC  
SERIES OF  
PULSES -  
(PERIODIC  
WAVE)



$A$  = AMPLITUDE (RELATED TO ENERGY)

$f$  = FREQUENCY # CYCLES / SECOND HERTZ (Hz)

$T$  = PERIOD = TIME FOR 1 CYCLE (s)

$\lambda$  = WAVELENGTH (m)