

$$m_{avg} = \sum_i f_i m_i$$

$m_i =$  mass isotope  $- i$

$f_i =$  fraction  $(i) = \%/100$

$$E = h\nu$$

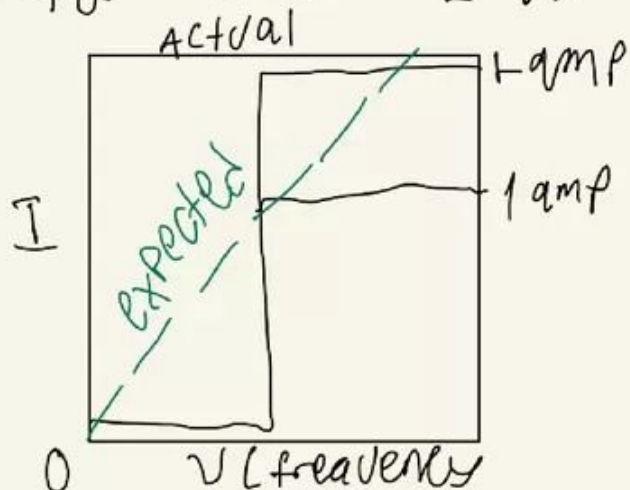
↑  
J·s

## Einstein's new model

-  $e^-$  is excited (ejected) all at once  $\rightarrow$  from one photon

- if photon has too little  $E$ , nothing happens

- too much  $E$  is OK



# Chapter 2

## light/waves

light is an electromagnetic (EM) wave

wavelength =  $\lambda$  (lambda)

amplitude = A

ions = charged particles:  $e^-$ ,  $P^+$ ,  $He^{2+}$ ,  $O^{2-}$

wave - periodic (repeating) things

harder work (more energy) gives more repeats in a signal system

frequency = # of repeats per second

proportional =  $\propto$

frequency =  $\nu$  (nu)  
- units of  $\frac{1}{s}$

Hertz = Hz =  $\frac{1}{s}$