A\_{c} = (-dN)/(dt) = lambda

N =no of particles

N = N\_{0}e^(-lambdat)

A\_{c} = A\_{0}e^(-lambdat)

Lambda = ((dN)/(dt))/N it gives the activity per atom

(Half life) T = (ln(2))/lambda

N = N\_{0} 2^((-t)/T)

m = m\_{0} 2^((-t)/T)

A = A\_{0} 2^((-t)/T)

Mean life T\_{m}

T\_{m} = 1/lambda = text(sum of lives of all active nucleus) /text(total no of nucleus)

N\_{1}/N\_{2} = lambda\_{2}/lambda\_{1] = T\_{1}/T\_{2}

Lambda\_{alpha} = P\_{1}lambda

Lambda\_{beta} = P\_{2}lambda

P\_{1}, P\_{2} are probabilities

Lambda\_{eff} = lambda\_{1} +lambda\_{2} + ……..

Alpha decay: mass number reduces by 4

Series:

Thorium 4n reduces to lead

Neptunium 4n + 1 reduces to bismuth

Uranium 4n +2 reduces to lead

Actinium 4n +3 reduces to lead

`A\_{1} rightarrow A\_{2} rightarrow A\_{3} rightarrow A\_{4}`

`lambda\_{1}` from `A\_{1} to A\_{2} , lambda\_{2}` from `A\_{2} to A\_{3}`

`lambda\_{2}` is smaller in value than `lambda\_{1}` because `A\_{2}` is stable