

Fall Term 2006

22.02 Introduction to APPLIED NUCLEAR PHYSICS

Problem Set #10 - Study Problems

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DUE: Practise only - for final

Krane, problems 7.5

Krane, problems 12.5

Also do Krane, problems 7.1, 7.2 modified as follows:

1. Assume the range is $10x$ the stopping length, $\lambda = (dE/Edx)^{-1}$, using the stopping lengths derived in class to compute the following ranges:
 - (a) A 10 MeV α particle in gold;
 - (b) A 5 MeV proton in water.
2. With the same assumptions on determining the range, find the ranges in aluminum of 4 MeV ^3He and ^3H .

Compute the Coulomb logarithm just once using, $I \simeq 10\text{ eV}$, and using incident alphas @ 4 MeV . Use this one value of, $\ln \Lambda$, for all the calculations.