

NE 150 - Introduction to Nuclear Reactor Theory
Spring 2007

Learned from Chapter 4

Sec. 4.1 to 4.2.

- Three types of scattering: What are potential, resonance and inelastic scattering?
- Split of $\sigma_s(E' \rightarrow E)$
- Sources of information about components
- S-wave scattering:
 - where valid along the energy scale
 - angular distribution in CMS, $p^c(\mu^c)$
 - how to obtain angular distribution in lab systems from $p^c(\mu^c)$
 - how to obtain scattering kernel, $K(E' \rightarrow E)$, from $p^c(\mu^c)$
 - maximum energy reduction, α
- Energy dependence of $\sigma_p(E)$
- Characteristics of inelastic scattering.

Sec. 4.3 to 4.8

(Numerical calculation of slowing down spectra ... read not study)

1. Slowing down in hydrogen
 - constant σ_s^H (Be able to do derivation)
 - E-dependant $\sigma_s^H(E)$
 - with absorption
2. Slowing down on non-hydrogeneous moderators
3. Thermal neutron spectra