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Elementary Calculations on the Slowing Down
of Neutrons by Thin Plate

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Abstract

The energy distribution of neutrons slowed down by a thin plate containing hydrogen, whose thickness is small compared with the mean free path of the incident neutrons of definite energy, is calculated for following cases, taking only the single and the double scatterings into account.

i) Normal incidence: In this case, the distribution functions for slow neutrons increases with decreasing energy E as $-\log E$.

(§ 2, § 3, § 4, § 5.)

ii) A point source: In this case, the distribution function is nearly constant. (§ 6.)

iii) A point source and a small detector placed face to face on either side of the plate: In this case also, the distribution function of neutrons, which hit the detector after single scattering, is nearly constant. This result is compared with the experiment.

(§ 7.)