

$d\Omega = \sin\theta d\theta d\psi$ where ψ is an azimuthal angle, one also has the relation

$$\Delta N = \text{const} \int_0^\pi \chi(E, (\Omega); E, \Delta E) \sin\theta d\theta.$$

However, according to (3-117'),

$$dE_1 = E_0 (1+\rho)^{-2} (2\rho) (-1) \sin\theta d\theta.$$

Therefore we also have

$$\Delta N = -\text{const} \int_{E_1^{\max}}^{E_1^{\min}} \chi(E_1; E, \Delta E) dE_1,$$

$$= \text{const} \int_{E_1^{\min}}^{E_1^{\max}} \chi(E_1; E, \Delta E) dE_1, \text{ or}$$

$$\Delta N = \text{const} \Delta E \Theta(E - E_1^{\min}) \Theta(E_1^{\max} - E)$$