\( dN = \sin \theta \, d\theta \, d\psi \) where \( \psi \) is an azimuthal angle, one also has the relation

\[
\Delta N = \text{cns}\int_0^\pi \chi (E, \omega; E, \Delta E) \sin \theta \, d\theta.
\]

However, according to \((3-117')\),

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

Therefore we also have

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

\[
= \text{cns}\int_{E_1^{\text{min}}}^{E_1^{\text{max}}} \chi (E_1; E, \Delta E) \, dE_1,
\]

\[
\Delta N = \text{cns} \Delta E \Theta (E - E_1^{\text{min}}) \Theta (E_1^{\text{max}} - E)
\]