

$$\frac{dN}{d\cos\theta} \propto 1 + \gamma \cos\theta$$



$$\frac{dN}{d\cos\theta} = a(1 + \gamma \cos\theta)$$

$$\cos\theta = \epsilon$$

$$\frac{dN}{d\epsilon} = a(1 + \gamma \epsilon)$$

$$dN = a(1 + \gamma \epsilon) d\epsilon$$

$$[1, -1] = [\theta=0, \theta=\pi]$$

$$\int_0^{N_{\text{tot}}} dN = \int_{-1}^1 a(1 + \gamma \epsilon) d\epsilon$$

$$\frac{d\cos\theta}{d\theta} = -\sin\theta$$

$$d\cos\theta = -\sin\theta d\theta$$

$$N_{\text{tot}} = \left[ a \left( \frac{\gamma \epsilon^2}{2} + \epsilon \right) \right]_{-1}^1 = -2a$$

$$N_{\text{tot}} = 1 \rightarrow 1 = -2a$$

$$a = -\frac{1}{2}$$

$$\frac{dN}{d\cos\theta} = a(1 + \gamma \epsilon) \rightarrow \frac{dN}{d\theta} = -a \sin\theta (1 + \gamma \cos\theta)$$

$$\int_0^{\pi} dN = \int_{-1}^1 a(1 + \gamma \epsilon) d\epsilon$$

$$= a \left( 1 + \frac{\gamma}{2} \right) (\epsilon - 1)$$

$$= -\frac{1}{2} \left( 1 + \frac{\gamma}{2} \right) (\cos\theta - 1)$$