In the example considered, y is in units of 1.74 Bev degrees. Thus multiplying the absissa, and dividing the ordinate by 1.74 gives the distribution per Bev degree unit of (c p φ). This is shown by noting that $f(\varphi)d\varphi = g(y)dy$ so

$$g(y) = \frac{B}{2}(y^2 + y_m^2)^{-3/2}\mathcal{F}_N(y) \text{ where}$$

$$B = Q\varphi_o^{-2} = 4\pi\left(\frac{ZR}{137\beta}\right)^2\left(\frac{N\,t}{A}\right)$$

$$y_m = \varphi_m/\varphi_o = \frac{1.14\,R}{137^2 r_{oe}}\left[1.13 + 3.76\,(Z/137\beta)^2\right]^{1/2} \text{ and}$$

$r_{oe} = e^2/m_e c^2 \approx 2.82 \times 10^{-13}$cm are independent of p for $\beta \approx 1$.

SECTION 3. MODIFIED MOLIÈRE THEORY

A. Methods and Notation

To introduce the mathematical methods and notation used in this section we review the derivation of the general expression for the projected angle multiple scattering distribution for an arbitrary single scattering cross section. The derivation follows that of Molière[2] and Olbert[3] and applies when only relatively small angles are important.

If $f(\varphi)d\varphi$ is the probability that an incident particle undergo a single scattering through the projected angle φ to $\varphi + d\varphi$