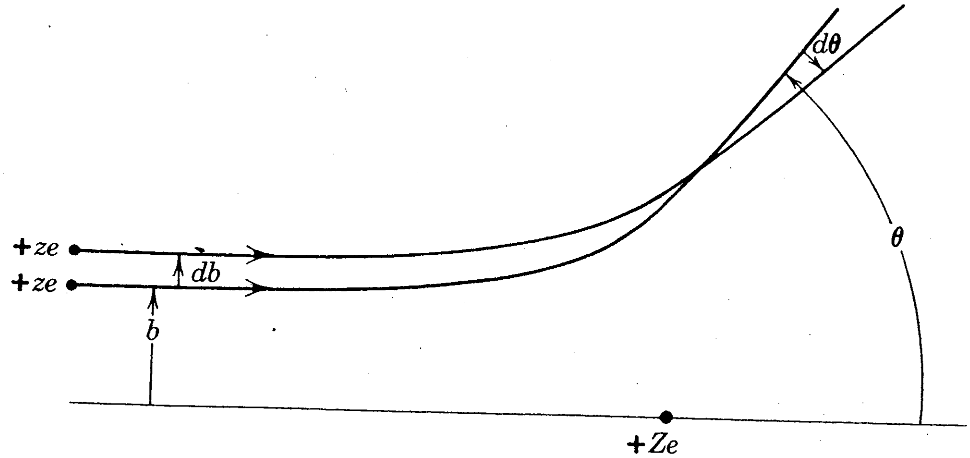

Figure 4-5 The relation between the impact parameter b and the scattering angle θ. As b increases (less close nuclear approach) the angle θ decreases (smaller scattering angle). The α particles with impact parameters between b and $b + db$ are scattered into the angular range between θ and $\theta + d\theta$.

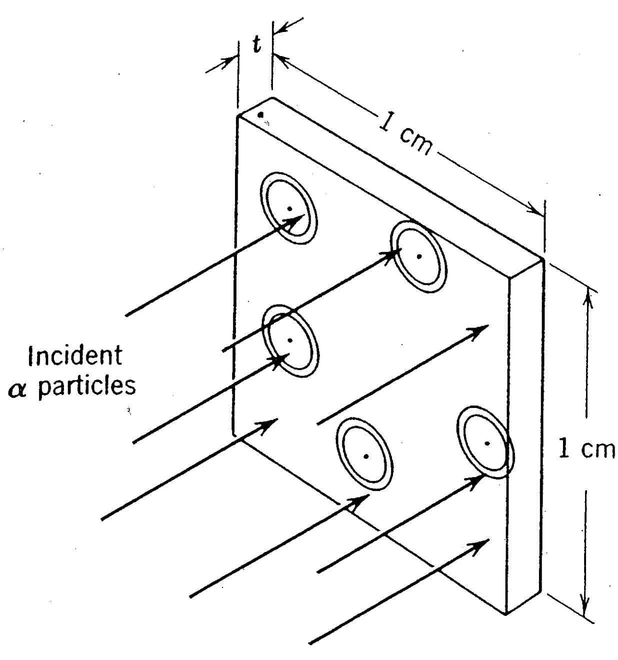

Figure 4-6 A beam of α particles incident on a foil of 1 cm^2 area and thickness t cm. The rings, which are purely geometrical constructs and not anything physical, are centered on nuclei. Actually there are enormously many more rings than shown and the rings are very much smaller than shown.

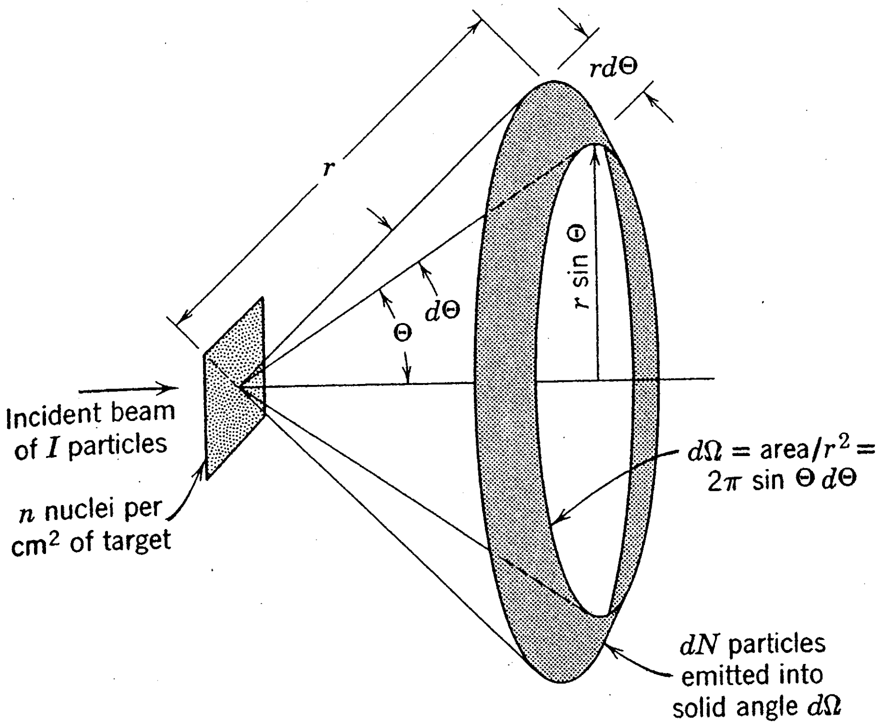

Figure 4-8 Illustrating the definition of the differential cross section $d\sigma/d\Omega$. If the target is thin enough for an incident particle to have negligible chance of interacting with more than one nucleus while passing through the target, then $dN = (d\sigma/d\Omega)In\, d\Omega$

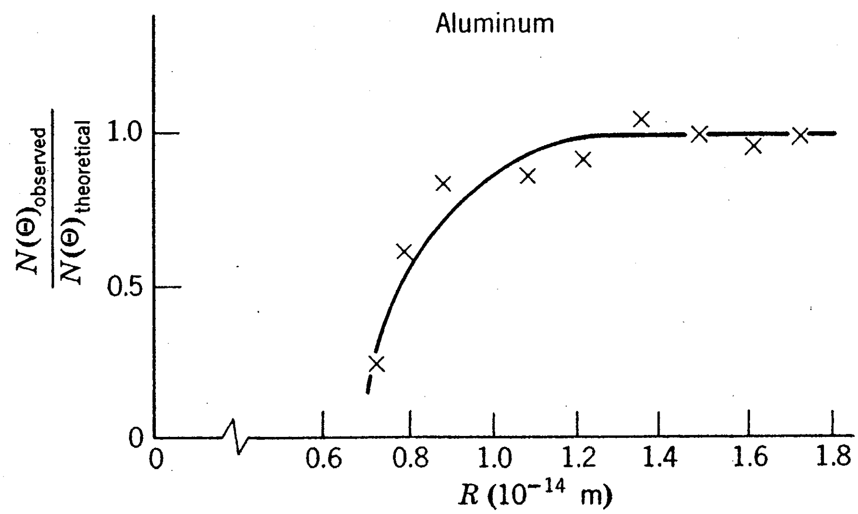

Figure 4-7 Some data obtained in the scattering of α particles from a radioactive source by aluminium. The abscissa is the distance of closest approach to the nuclear center.

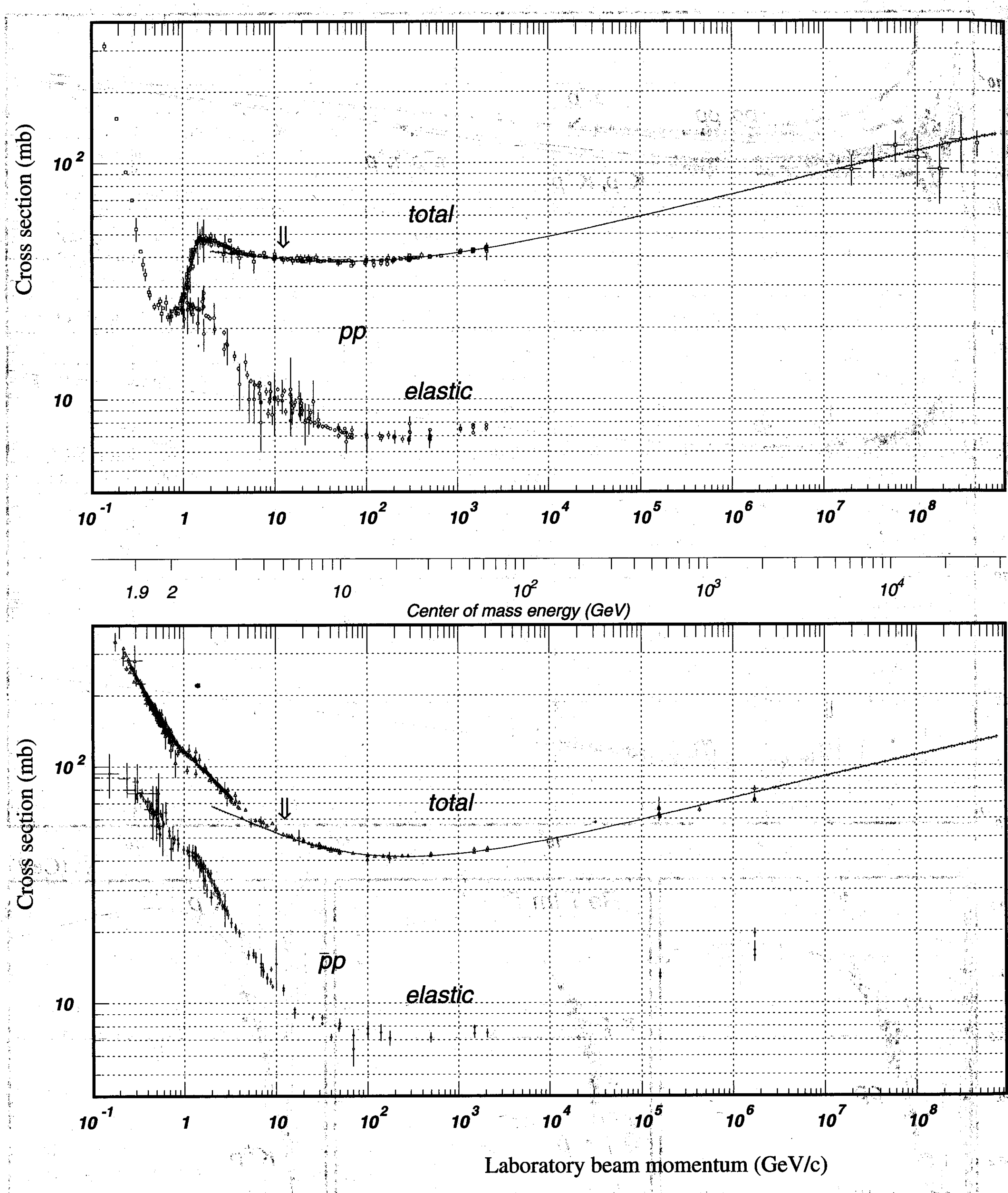

Figure 39.12: Total and elastic cross sections for pp and $\overline{p}p$ collisions as a function of laboratory beam momentum and total center-of-mass energy. The total cross section for $\Sigma^- p$ collisions is also presented. Corresponding computer-readable data files may be found at `http://pdg.lbl.gov/xsect/contents.html` (Courtesy of the COMPAS group, IHEP, Protvino, Russia, July 2001.)