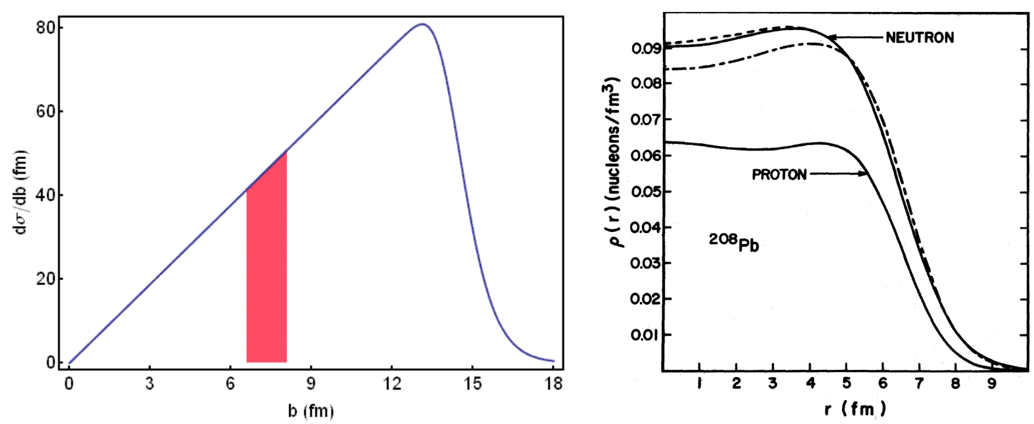
the average centrality:

$$\int_0^{b_{\text{cent}}} db \frac{d\sigma}{db} = \frac{1}{2}(C_1 + C_2)\sigma_{\text{tot}}. \tag{A.5}$$



(a) (b)

Figure A.2: *(a) Plot of $d\sigma/db$ as a function of b for the Woods-Saxon ^{197}Au nucleus. The shaded region corresponds to $20-30\%$ centrality with endpoints at $b = 6.6$ and 8.1 fm; the single representative impact parameter for this centrality class, found by properly weighting from Eq. (A.5), is $b = 7.4$ fm. (b) Plot of the nuclear density as a function of radius separately for protons and neutrons in ^{208}Pb [444].*

The nuclear density profile can take many forms. The simplest numerically is the hard cylinder geometry, which is constant in density over the reaction plane:

$$\rho_{HC}(x, y) = \rho_0 \theta(\sqrt{x^2 + y^2} - R_{HC}). \tag{A.6}$$

This of course leads to participant and binary densities that are also constant