Compound Nucleus

Atomic physics: most collisions are elastic

Nuclear physics: most collisions are inelastic. All energy of an incoming particle is dispersed among the nucleons and a compound nucleus is formed.

\[ R = 1.4A^{1/3} \text{ fm} \]

\[ T_{\text{track}} = \frac{R}{U_h} \]

Compound \( \Rightarrow \) Track

We already have seen that the level density increases exponentially. So the spacing between nuclear states is much less than the spacing between the single particle energies.

Configurations in which the energy is concentrated on one particle are unimportant. There five there is little difference in the nuclear spectrum below and above the dissociation energies.