Compound Nucleus

**Atomic Physics**

- Elastic collisions are common

**Nuclear Physics**

- Most collisions are inelastic
  - The energy of an incoming particle is dispersed among the nucleons and a compound nucleus is formed

\[
\text{True} = \frac{K}{U_n}
\]

- \( K = 1.4A^{1/3} \) for highly excited nuclei

\[ \text{Compound} \rightarrow \text{Track} \]

The level density inside a nucleus increases exponentially. The spacing between nuclear states is much less than the single-particle energy.

Assuming a thermal distribution configuration where all energy is concentrated on one particle are unimportant. Therefore, there is little difference in the nuclear spectrum above and below the dissociation energy.