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Model calculation of Ue

Due to the exist of electrons around the target atom, the effect c. m. energy in experient is larger than that of bare nuclei system. The larger part Ue is the absolute value of the potential between the projectile and electrons is Ue. In the energy region of astrophysical interest, Ue has a significant imoact on cross section. However, Ue got by ananlyzing experiment data is usually large than that got by theoretical model. A new model is constructed based on quantum mechanics to calculate Ue. When the projectile is p and target is light nuclei, the trend of Ue varyig with target atomic number is quadratic trend.

Field of Research

Nuclear reaction

Experiment/Theory

Theory

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