

NEW APPROACH TO HEAVY ION ELASTIC SCATTERING ANGULAR DISTRIBUTION ANALYSIS

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The calculation method of summary complete fusion, incomplete fusion, quasifusion and deep inelastic collision σ_F and total peripheral reaction σ_D cross sections from heavy-ion elastic scattering angular distribution analysis is developed, which allows to understand σ_F and σ_D formation mechanism for strongly as for weakly bound ions. The method provides to calculate quantitative characteristics of fusion enhancement (and corresponding peripheral reactions hindrance) for strongly bound ions and, vice versa, of fusion hindrance (and corresponding peripheral reactions enhancement) for weakly bound ones. Besides, there is possibility to calculate probability distribution of different processes over partial waves, giving much deeper insight into the physics of processes, which take place during two heavy ion collision.