

CONTRIBUTION OF LOW-ENERGY α -PARTICLES TO THE $^{12}\text{C}(n,3\alpha)n'$ REACTION

Dinko Plenković
 "Ruđer Bošković" Institute, Zagreb, Yugoslavia

A method for correcting experimental data has been developed for the case when physical magnitudes under certain conditions are not measured. This method is applied to the nuclear $^{12}\text{C}(n,3\alpha)n'$ reaction in which low-energy α -particles might be lost in measurement. The most probable reaction mechanism is supposed to be:

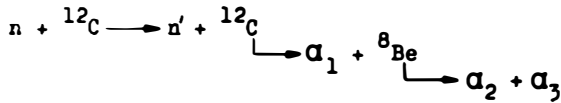


Fig. A illustrates contributions of low-energy α -particles for reactions involving specific ^{12}C and ^8Be states (thin lines). From them the resulting contribution (thick line) has been obtained using experimentally determined but corrected reaction mixture. Spectra of the outgoing α -particles have been corrected and average energies \bar{E}_α of α -particles calculated. The solid histogram in Fig. B represents the measured α -particle spectrum, and the solid curve the corrected one. The dashed lines relate to the spectra of α -particles if the events with at least one α -particle energy below the threshold E_δ are excluded.

