

INTRA-ATOMIC DOUBLE SCATTERING OF BINARY ENCOUNTER ELECTRONS IN HEAVY-ION COLLISIONS WITH GAS TARGETS¹

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Experimental evidence for intra-atomic double scattering of fast Binary Encounter (BE) electrons produced in collisions of 5.9 MeV/u U²⁹⁺ with various gas targets is presented. A broad distribution of electrons displaying the shape of the (BE) peak at twice the velocity of the ion beam at angles up to 135° is observed in the double differential electron emission spectra. This emission is attributed to target electrons ejected in a knock-on collision that are subsequently elastically scattered at their own target nuclear potential.

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