

Impact parameter in single proton transfer reaction

$${}^{56,58}\text{Fe}({}^{18}\text{O}, {}^{17}\text{N}){}^{57,59}\text{Co}$$

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Impact parameter is crucial in analyzing heavy ion nuclear reactions. As the residual effect of strong interaction force, the magnitude of nuclear force can be ignored in the case of high energy, but it is not suitable for low energy. For low energy, scattering angles in center of mass coordinate can be used to deduce a general impact parameter with a classical mechanics formula. The feature of transfer reaction that single peak appears at the grazing angle, deduced a vague impact parameter of single proton transfer reaction.

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