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# Nuclear reaction mechanisms for incident nucleons and light composite particles

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Low-energy nuclear reaction mechanisms are frequently classified as either direct, pre-equilibrium or compound nucleus ones. Here, the role of the first two of these is examined up to the stage of the formation of a compound nucleus. Although direct reactions are often distinguished from pre-equilibrium ones, the point of view is adopted here that the latter consist, for the most part, of a sequence of direct reactions [1-3]. The characteristics of nucleon-induced reactions of this type are briefly examined and the principal models in use at present to describe them are discussed [4-6].

Attention is then turned to stripping and breakup reactions involving light composite projectiles. The discussion is concentrated on the deuteron, the simplest of these particles as well as the least bound. The principal methods used to describe stripping and breakup [7-9] are discussed and their consequences on emission spectra and on the formation of the compound nucleus are illustrated with several examples [10-11].

Pickup reactions and the models in use for their description [12] are briefly mentioned in closing.

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**Primary author:** CARLSON, Brett (Instituto Tecnológico de Aeronáutica)

**Presenter:** CARLSON, Brett (Instituto Tecnológico de Aeronáutica)

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