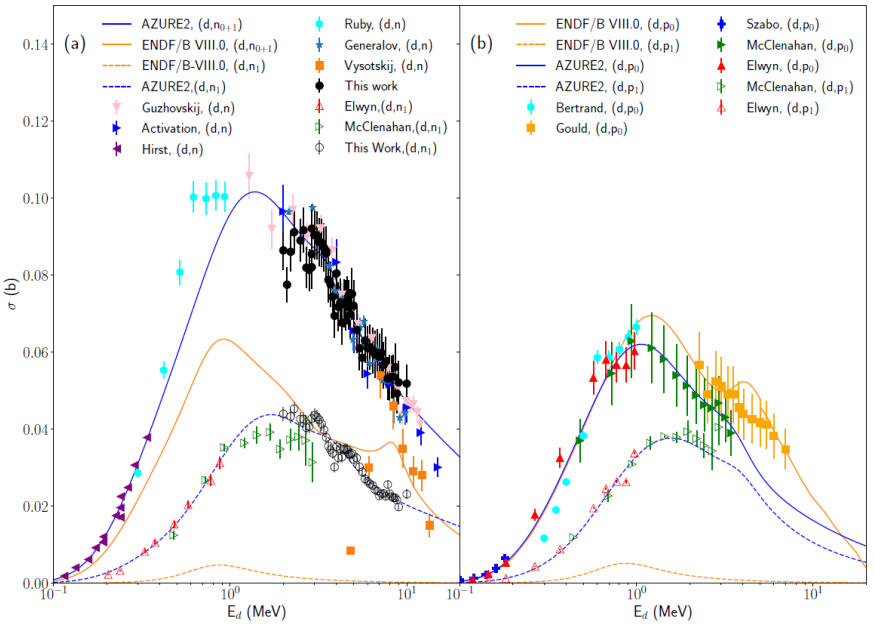
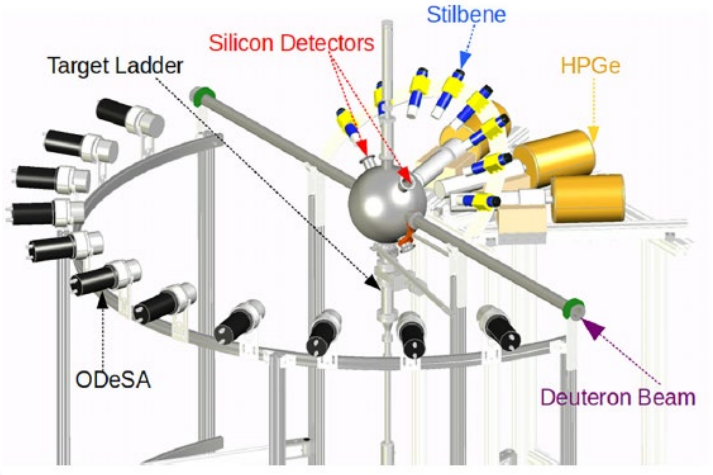
Comprehensive study of d+^{6}Li via observing simultaneous outgoing neutrons, γ rays, and charged particles

Deuteron-induced reactions on ^{6}Li are important for nuclear structure studies and nuclear applications. A new experimental effort was dedicated to improve incomplete partial cross sections and the angular distribution information for d+^{6}Li reactions and to address the inconsistencies between various *R*-matrix evaluations of the ^{8}Be system. The new measurements were performed over a deuteron energy range of 1.8 to 10 MeV with an angular distribution





coverage of 20–170°. The experiment simultaneously measured neutrons, charged particles, and γ rays from the various exit channels. The cross sections for open reaction channels measured simultaneously are presented. In addition, results for the ^{6}Li(d,n)^{7}Be total cross section using the activation method are also presented.

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