RADIATIVE NUCLEON CAPTURE AND THE OPTICAL POTENTIAL

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Abstract

Two approaches to the description of radiative nucleon capture on medium and heavy nuclei in the MeV region, the (consistent) direct-semidirect model (CDSD/DSD) and the pre-equilibrium single-particle radiative mechanism, are compared one with another and against the available data, both in the continuum region and when leading to discrete states. The role of the optical potential, important for the CDSD approach, is re-investigated and some modifications are suggested. The significance of several model parameters entering the pre-equilibrium calculations is also addressed.

References:

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