— 第924回九大原子核セミナー —

講師： Pierre Descouvemont 氏 (Université Libre de Bruxelles)

演題： CDCC description of ^{9}Be+^{208}Pb scattering around the Coulomb barrier

日時： 2月 16日 (月) 16:30〜

† 今回は通常と曜日が異なりますのでご注意ください

場所： 理学部 物理大学院講義室 (理学部2号館2階2263室)

概 要

We investigate the ^{9}Be+^{208}Pb scattering at energies around the Coulomb barrier. The ^{9}Be nucleus is described in a α+α+n three-body model, using the hyperspherical coordinate method. We first analyse spectroscopic properties of ^{9}Be, and show that the model provides a fairly good description of the low-lying states. The scattering with ^{208}Pb is then studied with the Continuum Discretized Coupled Channel (CDCC) method, where the α+α+n continuum is approximated by a discrete number of pseudostates. The use of a three-body model for ^{9}Be improves previous theoretical works, where ^{9}Be is assumed to have a two-body structure (^{8}Be+n or ^{5}He+α), although neither ^{8}Be nor ^{5}He are bound.

Optical potentials for the α+^{208}Pb and n+^{208}Pb systems are taken from the literature. We present elastic-scattering, breakup and fusion cross sections at different energies, and investigate the convergence with respect to the truncation of the α+α+n continuum. We show that continuum effects increase at low energies.

連絡先: 九州大学 理学部 物理学教室 理論核物理研究室
TEL: 092-642-2111 (内線 8357)
石井 優大 (ishii@phys.kyushu-u.ac.jp)

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