乞掲示

理化学研究所原子核グループコロキウム　*2003. 8. 6*

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題目 ： Nucleon-Nucleon Correlations and One-Nucleon Removal and Inclusive Proton-Induced Reactions

∗ The seminar will be given in *English.*

日時 ： 2003年 8月 6日 (Wed.)　14:30 –

場所 ： RIKEN Main Bldg. 1F Seminar Room

Abstract

Single-particle overlap functions and spectroscopic factors are calculated on the basis of Jastrow-type one-body density matrices of open-shell nuclei constructed by using a factor cluster expansion. The resulting overlap functions are applied for the description of the cross sections of (p, d) reactions on ^{24}Mg, ^{28}Si and ^{32}S and of ^{32}S(e, e'p) reaction. The relative role of both shell structure and short-range correlations incorporated in the correlation approach on the spectroscopic factors and the reaction cross sections is pointed out.
A semiclassical distorted wave (SCDW) model with Wigner transform of one-body density matrix obtained in methods which include nucleon-nucleon correlations to a different extent is presented for multistep direct (p, p'x) reactions to the continuum. This SCDW model is applied to analyses of multistep direct processes in ^{12}C(p, p'x), ^{40}Ca(p, p'x) and ^{90}Zr(p, p'x) in the incident energy range of 150-392 MeV. The calculated angular distributions are in good agreement with the experimental data, in particular at backward angles, where the higher momentum components of target nucleons properly taken into account play a crucial role.

∗ Host researcher : A. Kohama (RIKEN)

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