2004 Vol.41 No.4 pp.573-578 DOI:

K^- Nucleus Elastic Scattering and Momentum-Dependent Optical Potentials

ZHONG Xian-Hui, LI Lei, CAI Chong-Hai, and NING Ping-Zhi

Institute of Physics, Nankai University, Tianjin 300071, China
(Received: 2003-7-17; Revised:)

Abstract: The K^- nucleus differential elastic scattering cross section for ^{12}C and ^{40}Ca at p_k=800 MeV/c is calculated with three momentum-dependent optical potential models, which are density-dependent, relativistic mean field, and hybrid model, respectively. It is found that the forms of momentum-dependent optical potential models proposed by us are reasonable and gain success in the calculations and the momentum-dependent hybrid model is the best model for the K^- nucleus elastic scattering.

PACS: 21.10.Dr, 26.90.Xh, 13.75.Ev
Key words: differential elastic scattering cross section, momentum-dependent optical potential, relativistic mean field

[Full text: PDF]

Close