

物理

8.17 MeV中子与天然铁作用的次级中子双微分截面测量

阮锡超 1, 黄翰雄 1, 蒋婧 1, 李霞 1, 仲启平 1

1 中国原子能科学研究院 核物理研究所, 北京 102413 2 兰州大学 核科学与技术学院, 甘肃 兰州 730000

收稿日期 修回日期 网络版发布日期:

摘要 测量了8.17 MeV中子与天然铁作用的次级中子双微分截面, 测量角度为30°~150°, 共11个角度, 采用n-p散射作为标准截面进行归一。测量数据用Monte Carlo方法进行了模拟, 以进行中子注量衰减、多次散射和有限几何修正。将测量结果与评价数据及其它测量数据进行了比较与分析。实验测量结果对数据评价、理论模型检验及实际应用等具有重要的意义。

关键词 [次级中子; 双微分截面; Monte Carlo方法; 评价数据](#)

分类号

Measurement of Secondary Neutron Emission Double Differential Cross Section for Natural Iron Induced by 8.17 MeV Neutron

RUAN Xi chao 1, HUANG Han xiong 1, JIANG Jing 1

1 China Institute of Atomic Energy, P. O. Box 275 46, Beijing 102413, China;

2 School of Nuclear Science and Engineering, Lanzhou University, Lanzhou 730000, China

Abstract The secondary neutron emission double differential cross section (DDX) of natural iron induced by 8.17 MeV neutron was measured. The neutron emission energy spectra were measured at 11 different angles from 30° to 150°. The results were normalized to n-p scattering measurement. The measured data were analyzed by Monte Carlo simulation for the corrections of neutron fluence attenuation, multiple scattering and finite geometry. The measured results were compared with the evaluated data and the other measurements. The experimental result will contribute to the nuclear data evaluation, the theoretical model calculation and the nuclear data applications.

Key words [secondary neutron](#) [double differential cross section](#) [Monte Carlo method](#) [evaluated data](#)

DOI

通讯作者

扩展功能

本文信息

▶ [Supporting info](#)

▶ [\[PDF全文\]\(650KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中包含“次级中子; 双微分截面; Monte Carlo方法; 评价数据”的相关文章](#)

▶ 本文作者相关文章

- [阮锡超](#)
- [黄翰雄](#)
- [蒋婧](#)
- [李霞](#)
- [仲启平](#)