

技术及应用

HPGe测量连续硬X射线能谱的解谱方法研究

全林, 屠荆, 陈志华, 刘月恒, 常永福, 刘书焕

西北核技术研究所, 陕西 西安710024

收稿日期 2006-5-16 修回日期 2006-9-4 网络版发布日期: 2007-10-10

摘要 结合数值模拟得到的单能光子在HPGe探测器上能量响应函数, 用改进的剥谱法对测量得到的连续硬X射线能谱进行解谱。扣除测量谱中康普顿、反散射等效应产生的计数对测量能谱的影响, 得到了仅反映探测器对光电效应的能量响应的能谱。最后, 通过效率修正, 完成了测量谱到实际能谱的还原, 为连续硬X射线能谱解析提供了可靠方法。

关键词 [X射线](#) [HPGe探测器](#) [剥谱法](#) [解谱](#)

分类号 [TL501.9](#)

Method Study on Spectrum Unscrambling of Continuous Hard X-ray Measurement by HPGe Detector

QUAN Lin, TU Jing, CHEN Zhi-hua, LIU Yue-heng, CHANG Yong-fu, LIU Shu-huan

Northwest Institute of Nuclear Technology, P.O.Box 69-16, Xi'an 710024, China

Abstract The influence of counts caused by non-photoelectric effect in measured continuous hard X-ray spectrum was corrected. The pure photoelectric spectrum was obtained using the method of improved spectrum stripping technology accompanied by energy response function of single-energy photon for HPGe detector which had been got in advance, and the real energy spectrum on measurement site was unfolded from the photoelectric spectrum by relative efficiency correction. The reliable method for continuous hard X-ray spectrum scrambling was obtained.

Key words [X-ray](#) [HPGe detector](#) [spectrum stripping](#) [spectrum unscrambling](#)

DOI

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [\[PDF全文\]\(126KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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“X射线”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [全林](#)
- [屠荆](#)
- [陈志华](#)
- [刘月恒](#)
- [常永福](#)
- [刘书焕](#)

通讯作者