

技术及应用

## 用蒙特卡罗方法研究球形充气电离室的能量响应特性

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**摘要** 环境 $\gamma$ 辐射监测用的电离室要求平能量响应。为使球形不锈钢充气电离室达到能量响应指标, 采用蒙特卡罗方法对充气电离室体积、壁、充气气体、收集极、屏蔽材料、屏蔽厚度及屏蔽面积等因素进行模拟计算, 为改善能量响应特性和拓展最低探测能量提供依据。

**关键词** [蒙特卡罗方法](#) [充气电离室](#) [能量响应特性](#) [最低探测能量](#)

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## Energy Response Characteristics of Ionization Chamber by Using Monte-Carlo Method

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**Abstract** A flat energy response characteristics is required for the gas filled ionization chamber used in environmental gamma radiation monitoring. In the paper the dependent of the energy response on the factors such as the volume, wall, gas, electrode, shielding materials and its thickness and area of the spherical argon filled chamber of stainless steel are studied by Monte-Carlo simulation method. The aim is to reach a energy response with variation less than  $\pm 30\%$  over the energy range from 65 keV to 6 MeV.

**Key words** [Monte-Carlo method](#) [gas-filled ionization chamber](#) [energy response characteristics](#) [low energy range](#)

DOI

### 扩展功能

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